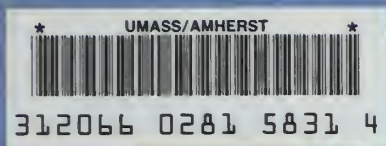


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A Report on the Rate Setting Commission of the Commonwealth of Massachusetts: Its Problems and Prospects

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August 1, 1970

The preparation of this document was financially aided through a federal grant of the Department of Health, Education, and Welfare authorized by the Public Health Service.

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PREFACE

This report summarizes information concerning the Rate Setting Commission of the Commonwealth of Massachusetts that has been obtained since November 17, 1969, at which time the author assumed part-time responsibilities as special Consultant in Health Economics to Mrs. Helen G. O'Meara, Director of the Office of Comprehensive Health Planning, and John F. O'Leary, Esquire, Special Counsel for Health Affairs and Chairman of the Rate Setting Commission. It is designed to serve several purposes.

First, it is a progress report which summarizes the activities in which the author has been involved and the conclusions drawn therefrom. Activities are not listed chronologically, since for the main they involved day-to-day participation in the operation of the Rate Setting Commission and the Office of Comprehensive Health Planning. However, it should be noted that these activities included specific responsibilities in a staff capacity as advisor in health economics for the Rate Setting Commission. In particular, such responsibilities centered on efforts to develop reimbursement procedures for paying hospitals (including sanatoria and infirmaries) both for care provided to publicly-aided patients and for care provided to the industrial accident case under Workmen's Compensation programs.¹

¹These procedures, as finally promulgated for publicly-aided cases by the Rate Setting Commission, are incorporated in Regulations No. 70-5 (in-patient) and No. 70-6 (outpatient) which replaced the essentially similar previous regulations, Emergency Regulations No. 70-2 and No. 70-3. For the Workmen's Compensation programs, rates effective January 1, 1970 are promulgated as Regulation No. 70-7. For outpatient care provided to Medicaid patients, the rate-freeze applied until July 1, 1970, when Regulation No. 70-8 became effective.

A more indirect role as advisor to the staff of the Rate Setting Commission has been assumed in many other areas, such as in delineating problems in rate setting that cross the usual institutional lines of hospitals, nursing homes and rest homes, other work defined gaps in data concerning health expenditures in Massachusetts as described in a memorandum to John F. O'Leary dated March 27, 1970. A number of special projects have also been undertaken, including, for example, examination of reimbursement procedures between Massachusetts Blue Cross, Inc. and various extended care facilities, some of which are participating in a pilot program to encourage the use of their less expensive facilities as a substitute for inpatient care in hospitals as described in a memorandum to John F. O'Leary dated May 4, 1970 concerning approval of contracts between Massachusetts Blue Cross, Inc., and various extended care facilities. In addition, of course, the author has acted as liaison between the Office of Comprehensive Health Planning and the Rate Setting Commission and has assisted both groups whenever economic expertese was requested.

Second, this is a report which describes the Rate Setting Commission as it exists today. Rules and regulations under which the Commission presently operates are described briefly in the text of this report and are listed in detail in the final section of the bibliography which concerns the Rate Setting Commission. Thus, this report is designed to delineate the many facets of the operation of the Rate Setting Commission.

Therefore, the hope is that this will represent a first step in the development of a document which, if kept updated, will ultimately evolve into a standard reference for anyone interested in the operation of the Rate Setting Commission.

Third, this work defines the problems in rate setting as they have emerged in the day-to-day operation of the Rate Setting Commission over the last six months. The purpose of this enumeration is to bridge the gap between the principles of reimbursement as traditionally expounded¹ and their application in paying an industry for services rendered. If the elements that comprise the formulas are more explicitly defined, it becomes possible to develop a formula from its component parts. Consequently, each element of the formula can be examined individually with reference to the possible alternatives that might be employed in establishing rates.

By thus compartmentalizing the process of developing "prices", decisions become more sensitive to rational analysis and less subject to influences that are based upon the immediate strengths of the economic self-interest of the various parties concerned. Since virtually by definition of a market place, the level of price that maximizes the momentary self-interest of the seller of

¹U.S. Department of Health, Education, and Welfare, Social Security Administration, Office of Research and Statistics. Reimbursement Incentives for Hospital and Medical Care: Objectives and Alternatives. Washington, D.C.: U.S. Government Printing Office, Social Security Administration, Office of Research and Statistics, Research Report No. 26, 1968.

services minimizes that of the buyer, the implications of immediate confrontation can only be reduced if a longer run point of view is adopted. For it is only over time, that buyer and seller develop a mutuality of interest as both become beneficiaries of improvements in either the operating efficiency of the industry or the effectiveness with which the industry meets the health needs and demands of the population that it serves. By narrowing the issues, choices can be reduced to manageable dimensions which can be subjected to rational appraisal.

Fourth and finally, this report is designed to serve as a background document for those interested in affecting the rate setting process, particularly as it is applied in the health fields in the Commonwealth of Massachusetts. In particular, it is designed to bring together the information required to appraise the problems and prospects of the Rate Setting Commission in order that other groups in the Commonwealth can bring their expertese to bear on the problems of the Commission. Conversely too, if the work of the Commission is better understood by those affected by its actions, the hope is that the Commission can be more helpful to these groups and therefore develop a better dialogue with them. Such a dialogue must encompass, not only hospital providers, third-party insurers, and consumers of health services, but also other state agencies with which there is clearly a need for better definition of "interface" areas. Thus, for example, three major groups, the Commission, the Massachusetts Department of Public Health and the various regional health agencies in the Office of Comprehensive Health Planning all

are affected by, and have an effect upon, capital expansion plans of health institutions. But whichever the groups and whatever the problems, coordination of effort implies an understanding of activities which it is hoped that this document will further, at least in so far as the activities of the Rate Setting Commission are concerned.

Thus, this report is designed to discuss the Rate Setting Commission, its problems and prospects, from both a descriptive and an analytic point of view in the hopes that a "cool" narrative on a "hot" topic will best stimulate enduring constructive action that will foster effectiveness and efficiency in the health care industry.

In closing these introductory remarks, it should be noted that responsibility for the contents of this report rests solely with the author. Thus, while this report owes its existence to the assistance and guidance of many individuals, the observations presented herein should in no way be construed to their detriment or be considered representative of their views. In particular, however, the author wishes to acknowledge the assistance of Mrs. Helen G. O'Meara, Director of the Office of Comprehensive Health Planning, and John F. O'Leary, Esquire, Special Counsel for Health Affairs and Chairman of the Rate Setting Commission. Special assistance has also been obtained from Mr. Edmund F. Stone, C.P.A., Executive Secretary of the Rate Setting Commission, as well as from the many members of his staff, including in particular, Edward W. Hanley, III, Esquire, Chief Counsel. In addition, the technical assistance of the staff of the Office of Comprehensive Health Planning in the

development of this report is also gratefully acknowledged with particular thanks to Jean M. Glancy for her role in the preparation of the bibliography and the finished manuscript. Finally, a special word of gratitude is due the Commissioners of the Rate Setting Commission, Slavatore Camelio, Modest S. Mele, C.P.A., and Professors Jerome Pollack and Leon S. White.

SECTION I: Health Care Costs: The Importance of Reimbursement Rates

Interest in the policies of the Rate Setting Commission stems from concern with the rising cost of medical care. Such concern is not new, but there is now a new sense of urgency concerning the problems arising out of the alarming rate of increase in health expenditures generally and hospitals, nursing homes, and other facilities offering inpatient care particularly.

THE PRICE OF MEDICAL CARE

This alarm is occasioned by the fact, for example, that while the Consumer Price Index (CPI) rose by 16 percent between June 1966 and December 1969, the medical care component rose by 24 percent and the hospital daily service charges component rose by 63 percent (Horowitz, February 1970). The dramatic increase in the price of medical care is further illustrated by the tabulations of medical care costs which follow.¹

Table 1, Chart 1, Table 2, Table 3

¹ For general description of the Consumer Price Index, see: U.S. Department of Labor, Bureau of Labor Statistics. The Consumer Price Index: A Short Description, 1967. Washington, D.C.: U.S. Government Printing Office, 1970.

Also see: Brackett, Jean C. "New BLS Budgets Provide Yardsticks for Measuring Family Living Costs," Monthly Labor Review, 92:4:3-16 (April 1969).

For latest published information, see: "Current Labor Statistics: Consumer Prices" in the latest issue of the Monthly Labor Review. For latest data and special compilations, communicate with U.S. Department of Labor, Bureau of Labor Statistics, John Fitzgerald Kennedy Federal Building, Government Center, Boston, Massachusetts 02203 (223-6761 X6769, Mr. Joseph Conody).

Table 1

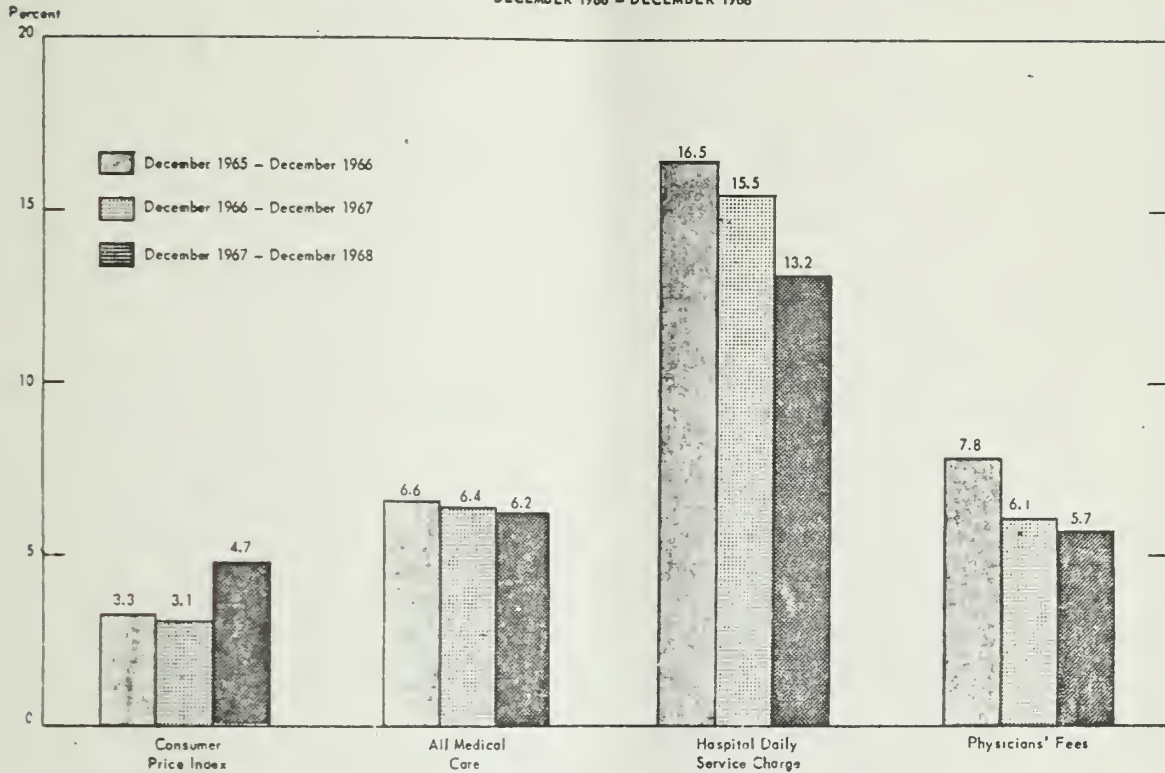
Average annual percentage increases for the Consumer Price Index and selected medical care components for the years 1966-1969

Item	Average annual percent increase			
	1966	1967	1968	1969
CPI, all items.....	2.9	2.8	4.2	5.4
Medical care total.....	4.4	7.0	6.1	6.9
Physicians' fees.....	5.8	7.1	5.6	7.0
Dentists' fees.....	3.2	5.0	5.5	7.0
Hospital daily service charges.....	9.6	19.1	13.2	13.0
Operating room charges.....	6.9	12.9	11.5	15.4

Source: Horowitz, Loucele A. "Medical Care Prices Fact Sheet, 1966-1969," Research and Statistics Note. Washington, D.C.: U.S. Department of Health, Education, and Welfare, Social Security Administration, Office of Research and Statistics, Note No. 2, February 23, 1970.

Chart 1

PERCENTAGE CHANGE OF CONSUMER PRICE INDEX AND SELECTED MEDICAL CARE COMPONENTS,
DECEMBER 1966 - DECEMBER 1968



✓ SOURCE: Consumer Price Index, Bureau of Labor Statistics.

Source: Horowitz, Loucele A. "Medical Care Prices Fact Sheet," Research and Statistics Note. Washington, D.C.: U.S. Department of Health, Education, and Welfare, Social Security Administration, Office of Research and Statistics, Note No. 6-1969, May 9, 1969, Chart 2.

Consumer Price Index and percentage change for medical care components, selected years, 1946-69

(1957-59=100, unless otherwise specified)

Item	Average annual price index							Percentage change					
	1946	1960	1965	1966	1967	1968	1969	Average annual					
								1946-60	1960-65	1965-66	1966-67	1967-68	1968-69
CPI, all items.....	68.0	103.1	109.9	113.1	116.3	121.2	127.7	3.0	1.3	2.9	2.8	4.2	5.4
Less medical care.....	(1/)	102.8	109.1	112.3	115.0	119.7	126.1	---	1.2	2.9	2.4	4.1	5.3
CPI, all services.....	63.9	105.6	117.8	122.3	127.7	134.3	143.7	3.7	2.2	3.8	4.4	5.2	7.0
Less medical care.....	(1/)	106.2	116.2	120.2	124.7	130.8	139.7	---	1.8	3.4	3.7	4.9	6.8
Medical care, total.....	60.7	108.1	122.3	127.7	136.7	145.0	155.0	4.2	2.5	4.4	7.0	6.1	6.9
Medical care services.....	58.4	109.1	127.1	133.9	145.6	156.3	168.9	4.6	3.1	5.4	8.7	7.3	8.1
Professional services:													
Physicians' fees.....	66.4	106.0	121.5	128.5	137.6	145.3	155.4	3.4	2.8	5.8	7.1	5.6	7.0
Family doctor, office visits.....	66.7	105.4	121.2	128.7	138.8	146.8	157.2	3.3	2.8	6.2	7.8	5.8	7.1
Family doctor, house visits.....	66.4	106.9	124.9	133.4	142.6	151.9	163.3	3.5	3.2	6.8	6.9	6.5	7.5
Herniorrhaphy (adult) 2/.....	---	---	104.0	108.0	113.9	119.1	123.9	---	---	3.8	5.5	4.6	4.0
Tonsillectomy and adenoidectomy.....	69.2	---	122.2	127.5	134.3	140.9	148.2	---	---	4.3	5.3	4.9	5.2
Obstetrical cases.....	57.5	105.0	117.8	123.0	132.3	139.2	150.2	4.4	2.3	4.4	7.6	5.2	7.9
Pediatric care, office visits 2/.....	---	---	106.1	114.3	123.6	129.6	141.4	---	---	7.7	8.1	4.9	9.1
Psychiatrist, office visits 2/.....	---	108.2	104.7	109.3	113.7	119.7	129.1	---	-7	4.4	4.0	5.3	7.9
Dentists' fees.....	67.0	104.7	117.6	121.4	127.5	134.5	143.9	3.2	2.4	3.2	5.0	5.5	7.0
Other professional services:													
Examination, prescription, and dispensing of eye-glasses.....	79.3	103.7	113.0	116.1	121.8	125.7	131.1	1.9	1.7	2.7	4.9	3.2	4.3
Routine laboratory tests 2/..	---	---	---	105.7	109.2	113.0	117.4	---	---	---	3.3	3.5	3.9
Hospital service charges:													
Daily service charges.....	37.0	112.7	153.3	168.0	200.1	226.6	256.0	8.3	6.3	9.6	19.1	13.2	13.0
Operating room charges 2/.....	---	---	106.4	113.7	128.4	143.2	165.2	---	---	6.9	12.9	11.5	15.4
X-ray, diagnostic series, upper G.I. 2/.....	---	---	102.1	105.7	112.3	117.1	122.7	---	---	3.5	6.2	4.3	4.8
Drugs and prescriptions.....	96.6	102.3	98.1	98.4	97.9	98.1	99.2	2.3	-8	.3	-.5	.2	1.1
Prescriptions 3/.....	65.9	102.6	90.8	90.6	89.0	87.5	88.6	3.2	-2.4	-2	-1.8	-1.7	1.3
Over-the-counter items 2/.....	---	---	101.3	102.4	103.4	106.0	106.9	---	---	1.1	1.0	2.5	.8

1/ Not available.

2/ Index base, December 1963.

3/ Index base, March 1960.

Source: Consumer Price Index, Bureau of Labor Statistics.

Source: Horowitz, Loucele A. "Medical Care Prices Fact Sheet, 1966-1969," Research and Statistics Note. Washington, D. C.: U.S. Department of Health Education, and Welfare, Social Security Administration. Office of

Consumer Price Index and medical care components, selected periods, December 1965-December 1969

(1957-59=100, unless otherwise specified)

Item	Dec. 1965	June 1966	Dec. 1966	June 1967	Dec. 1967	June 1968	Dec. 1968	June 1969	Dec. 1969
CPI, all items.....	111.0	112.9	114.7	116.0	118.2	120.9	123.7	127.6	131.3
Less medical care.....	110.2	112.1	113.7	114.8	116.8	119.5	122.2	126.0	129.7
CPI, all services.....	119.3	122.0	125.2	127.4	130.1	133.9	138.1	143.3	148.3
Less medical care.....	117.6	120.1	122.8	124.5	126.8	130.4	134.5	139.2	144.4
Medical care, total.....	123.7	127.0	131.9	136.3	140.4	144.4	149.	155.2	158.1
Medical care services.....	128.9	133.0	139.4	145.2	150.4	155.5	161.4	169.1	172.8
Professional services:									
Physicians' fees.....	123.3	128.0	132.9	137.3	141.0	144.9	149.1	155.5	160.0
Family doctor, office visits.....	123.1	128.1	133.3	138.5	142.7	146.4	150.5	157.6	162.4
Family doctor, house visits.....	127.4	133.3	138.3	142.2	145.8	151.6	157.0	163.4	167.6
Herniorrhaphy (adult) 1/.....	105.7	107.5	110.5	114.1	116.0	119.3	121.2	124.1	125.4
Tonsillectomy and adenoidectomy.....	123.4	127.3	130.8	132.8	137.4	140.6	145.3	147.8	151.6
Obstetrical cases.....	118.6	121.9	127.5	132.5	134.6	138.4	142.9	149.4	155.0
Pediatric care, office visits 1/.....	107.5	115.0	119.5	123.6	126.2	129.0	133.3	140.3	145.9
Psychiatrist, office visits 1/.....	106.3	108.9	112.6	113.5	115.1	119.0	123.3	129.6	132.6
Dentists' fees.....	118.8	120.9	124.3	126.9	130.7	134.1	137.3	144.2	147.6
Other professional services:									
Examination, prescription, and dispensing of eyeglasses.....	114.1	115.7	118.6	121.7	121.6	125.2	127.6	131.2	133.9
Routine laboratory tests 1/.....	104.0	105.7	107.6	109.1	111.4	112.3	114.2	117.9	119.5
Hospital service charges:									
Daily service charges.....	157.1	164.2	183.0	200.1	211.4	224.6	239.3	253.8	267.9
Operating-room charges 1/.....	108.9	112.6	119.0	128.6	133.7	142.7	150.9	165.6	170.9
X-ray, diagnostic series, upper G.I. 1/.....	102.6	104.5	110.0	111.9	114.4	116.7	119.0	122.3	124.7
Drugs and prescriptions.....	98.1	98.6	98.3	97.7	98.1	98.0	98.5	99.3	99.6
Prescriptions 2/.....	90.7	90.5	90.3	88.8	88.4	87.2	87.6	88.6	89.1
Over-the-counter items 1/.....	101.4	102.9	102.5	103.1	104.7	106.1	106.6	107.1	107.1

1/ Index base, December 1963.

2/ Index base, March 1960.

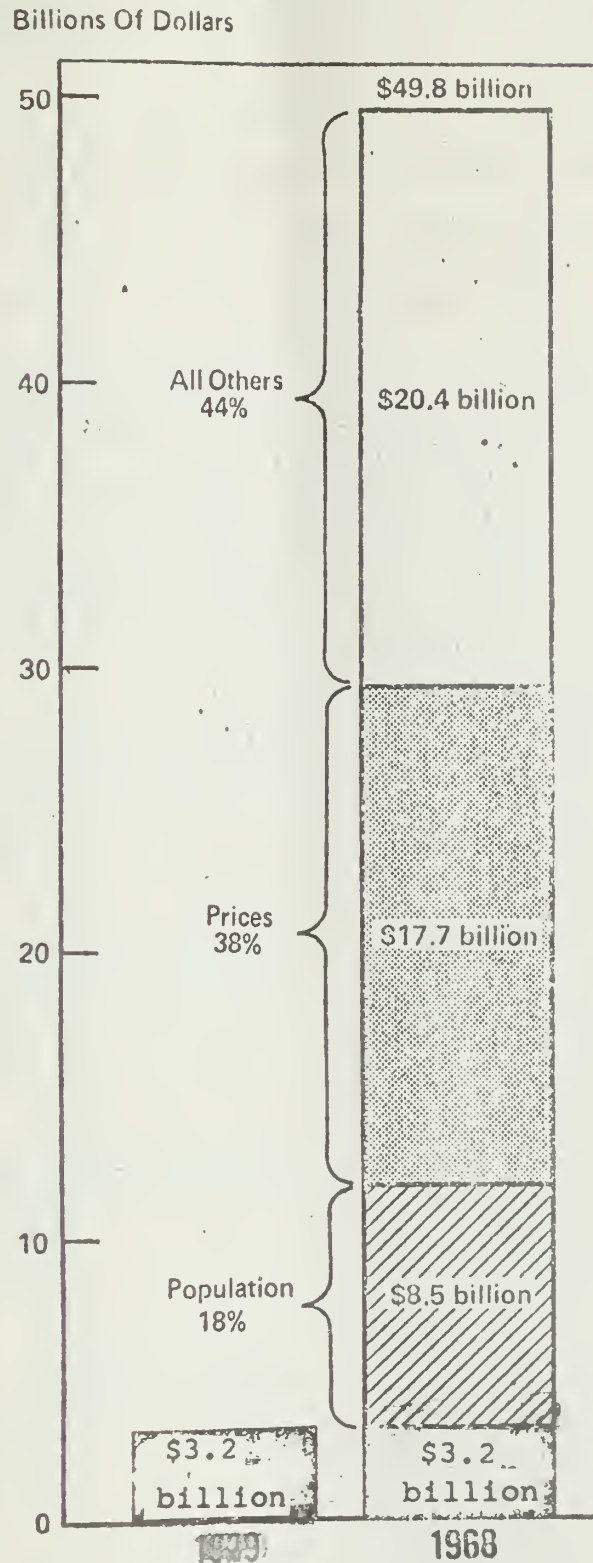
Source: Consumer Price Index, Bureau of Labor Statistics.

Source: Horowitz, Loucele A., "Medical Care Prices Fact Sheet, 1966-1969," Research and Statistics Note, Washington, D.C.: U.S. Department of Health, Education, and Welfare, Social Security Administration, Office of Research and Statistics, Note No.2, February 23 1970, Table 1.

EXPENDITURES ON HEALTH AND MEDICAL CARE

In part as a result of these increases in price and in part because of growth in population, but also as a result of real changes in the quantity of health and medical services that are consumed, total national expenditures for health and medical care increased 11.9 percent to reach \$60.3 billion in fiscal year 1969, with expenditures for health insurance for the aged (Medicare) increasing 23 percent or \$1.3 billion to a total of \$6.6 billion. (Copper, November 7, 1969, and Skolnik and Dales, December 1969).

Chart 2



Source: Rice, Dorothy P., and Barbara S. Cooper. "National Health Expenditures, 1929-68," Social Security Bulletin, 33:1:3-20 (January 1970), Chart 4.

Not only has the "price" of medical care increased faster in the last year than the "price" of the market basket of goods that are encompassed in the Consumer Price Index, but expenditures on health and medical care have increased about three times faster in the last year than expenditures for our entire National Product.

Changes in the costs of health care over time are further summarized by the following compilation of changes in alternative measures of the cost of hospital care and the cost of physician care developed by Klarman (March 1970).

Table 4, Table 5

Table 4

Basic data, short-term hospital care: Expenditures and alternative measures of price or unit cost, United States, selected years, 1929-67

Calendar year	Expenditures (million)	Daily service charge, CPI (1957-59 = 100)	Expense per patient day, AHA	Expenditures per inpatient day	Expenditures per adjusted patient day		CPI, all items (1957-59 = 100)	Taylor's hospital cost index
					1 to 4	1 to 5		
1929	\$ 380	24.2	\$ 4.39	\$ 4.53	\$ 4.35	\$ 4.39	59.7	na
1940	551	25.4	5.31	5.47	5.12	5.19	48.8	na
1950	2,234	57.8	15.91	16.46	15.44	15.64	43.8	.80
1960	6,032	112.7	32.92	34.55	31.55	32.10	103.1	1.20
1965	9,545	153.3	45.40	46.41	41.72	42.58	109.9	1.37
1966	11,211	168.0	49.63	52.24	46.47	47.52	113.1	1.38
1967	13,287	200.1	55.90	59.48	52.96	54.15	116.3	1.46

Sources:

Expenditures—Social Security Administration, unpublished data.

Daily service charge, CPI—Bureau of Labor Statistics, Consumer Price Index, published and unpublished data.

Expense per patient day, AHA—moving 2-year average of data from *Hospitals*, Guide Issue, annually; estimated at 97 percent of expenditures per inpatient day for 1929 and 1940.

Expenditures per inpatient day—Column 1 divided by inpatient days, from *Hospitals*, Guide Issue, annually.

Expenditures per adjusted patient day, 1 to 4 and 1 to 5—Column 1 divided by inpatient days plus 1/4 or 1/5 of outpatient visits.

Latter are taken for 1929 and 1940 from *Journal of American Medical Association* and for later years from *Hospitals*, Guide Issue, annually.

CPI, all items—Bureau of Labor Statistics.

Taylor's hospital cost index—Taylor, Vincent. *The Price of Hospital Care*. (Santa Monica, Calif.: The Rand Corporation, May 1969); also National Advisory Commission on Health Manpower. *Report*, Vol. 1. (Washington, D.C.: GPO, 1967) p. 89.

Source: Klarman, Herbert E. "Increase in the Cost of Physician and Hospital Services," *Inquiry*, 7:1:22-36 (March 1970), Table 3.

Table 5

Annual percentage rates of change, physicians' services: Expenditures, fees, and related factors, United States, selected years, 1929-67

Interval	Expendi- tures	Fee index	Popu- lation	All other	Percent of charges collected	Aging factor	CPI, all items	"Extra" price increase
1929-67	6.3	2.4	1.3	2.5	0.3	0.2	1.8	0.6
1929-40	- 0.3	-0.2	0.8	-0.9	-0.2	0.1	-1.9	1.7
1940-50	11.0	3.4	1.4	5.9	0.7	0.1	5.6	-2.2
1950-60	7.5	3.4	1.7	2.2	0.7	0.1	2.1	1.3
1960-65	9.0	2.8	1.5	4.5	0.0	0.0	1.3	1.5
1965-66	4.7	5.8	1.2	-2.2	0.0	1.7	2.9	2.9
1966-67	12.4	7.1	1.1	3.7	0.0	1.0	2.8	4.3

Source:

Table 2; also Table 1.

Source: Klarman, Herbert E. "Increase in the Cost of Physician and Hospital Services," Inquiry, 7:1:22-36 (March 1970), Table 4.

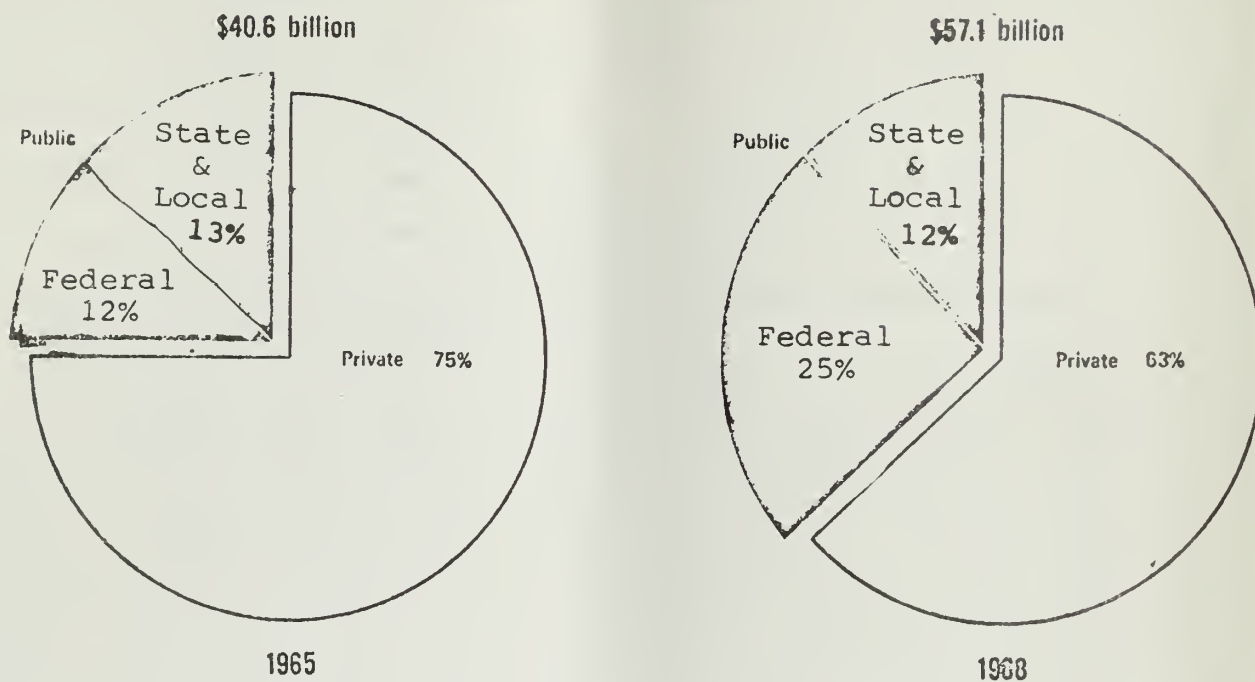
EXPENDITURES UNDER PUBLIC PROGRAMS

The impact of these increases, moreover, is greatest upon governmental bodies, whether at the local, state or national level. Although health expenditures spiraled upwards in 1969, they still accounted for only 6.7 percent of the Gross National Product (Skolnik and Dales, December 1969). Spending for health and medical care under public programs, however, accounted for 2.5 percent of the Gross National Product and 37.5 percent of all expenditures for health and medical care. (Table 3 and Table 5, Skolnik and Dales, December 1969.) Furthermore, the importance of government spending has been increasing. Private expenditures for health and welfare accounted for 62 percent of the total health bill in 1969 as against 75 percent in 1965, with private health insurance accounting for 22 percent of the total bill in 1969. (Cooper, November 7, 1969).

Chart 3

Chart 3

Distribution of national health expenditures by source of funds, 1965 and 1968



Source: Rice, Dorothy P., and Barbara S. Cooper. "National Health Expenditures, 1929-68," Social Security Bulletin, 33:1:3-20 (January 1970), Chart 1.

The importance of public expenditures for health and medical care is clarified further by viewing such spending both in terms of governmental expenditures for all purposes and as a segment of social welfare expenditures. As compared to the 6.7 percent of Gross National Product devoted to health and medical care, 20 percent of Gross National Product was devoted to social welfare expenditures, both public and private, in fiscal 1969. These social welfare expenditures under public programs represented \$126,801.7 million or 44.5 percent of government expenditures for all purposes in fiscal 1969 (Skolnik and Dales, December 1969). The proportion of the federal dollar devoted to social welfare expenditures was less (37.8 percent or \$68,595 million) than the proportion of the state and local dollar devoted to such social welfare expenditures (57.4 percent or \$58,206 million).

Whereas 44 percent of government spending for all purposes was attributable to public welfare expenditures in fiscal 1969, those public expenditures specifically for health and medical care accounted for 8 percent of all public spending, that is for 18 percent or \$22,610 million of the public welfare expenditures. However, in fiscal 1969, health and medical care accounted for a larger proportion of the social welfare dollar at the federal level (22 percent or \$15,133 million) than at the state and local level (13 percent or \$6,477 million). (Table 1 and Table 5, Skolnik and Dales, December 1969, and Table 3, Cooper, November 7, 1969).

Of the public expenditures by all levels of government, the percent financed by the federal government constituted 51.0 percent of the expenditures under health and medical programs and 66.9 percent of all expenditures for health and medical care provided by any public program in 1968-1969. (Skolnik and Dales,

December 1969)

EXPENDITURES BY TYPE

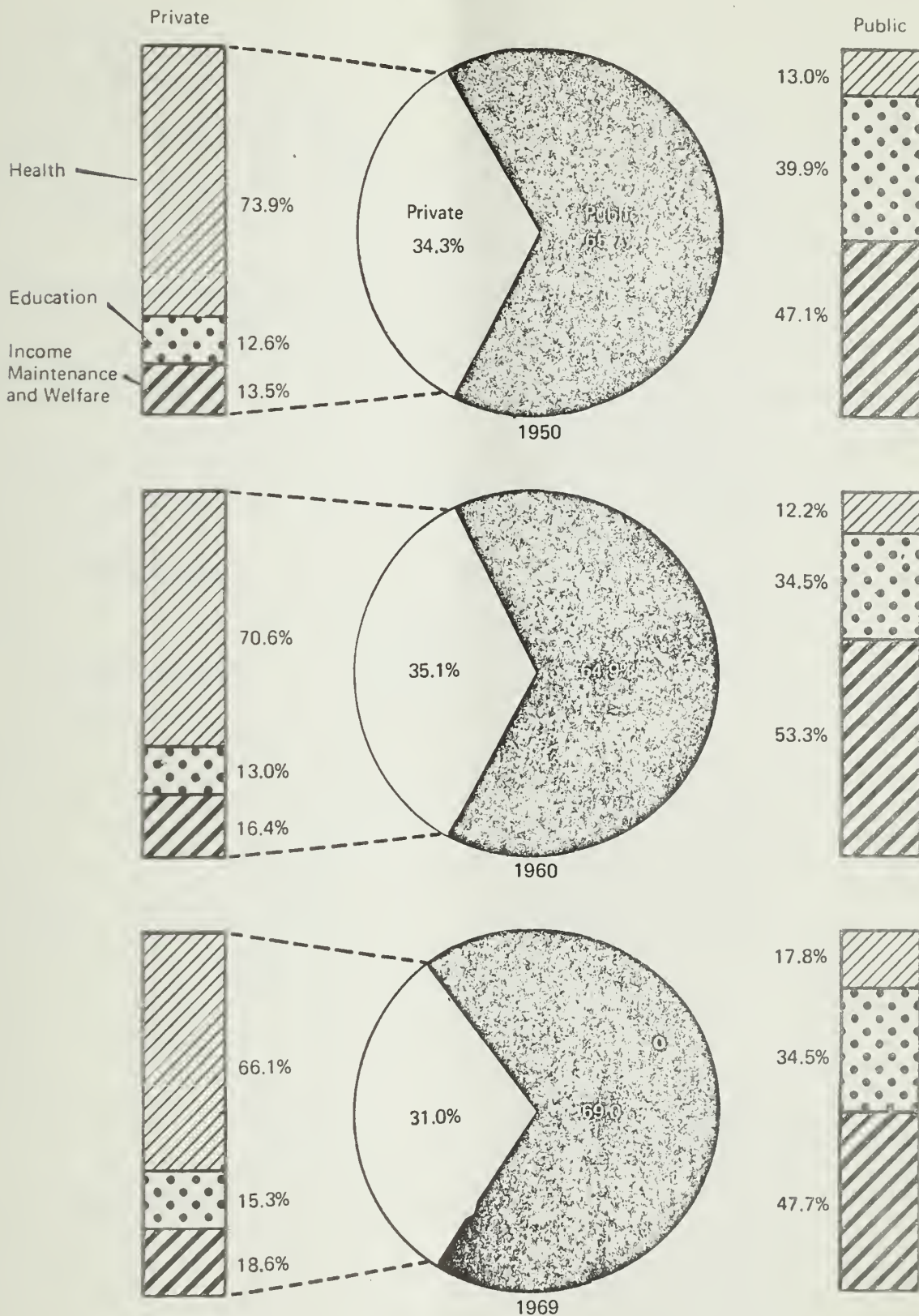
Analysis of health expenditures by type emphasizes certain sorts of expenditures which differ in importance by source of funds. Thus, for example, whereas 36 percent of the total health care dollar in 1968 was devoted to hospital care, this represented only 28 percent of the private dollar but 49 percent of the public dollar.

Chart 4, Chart 5

Chart 4

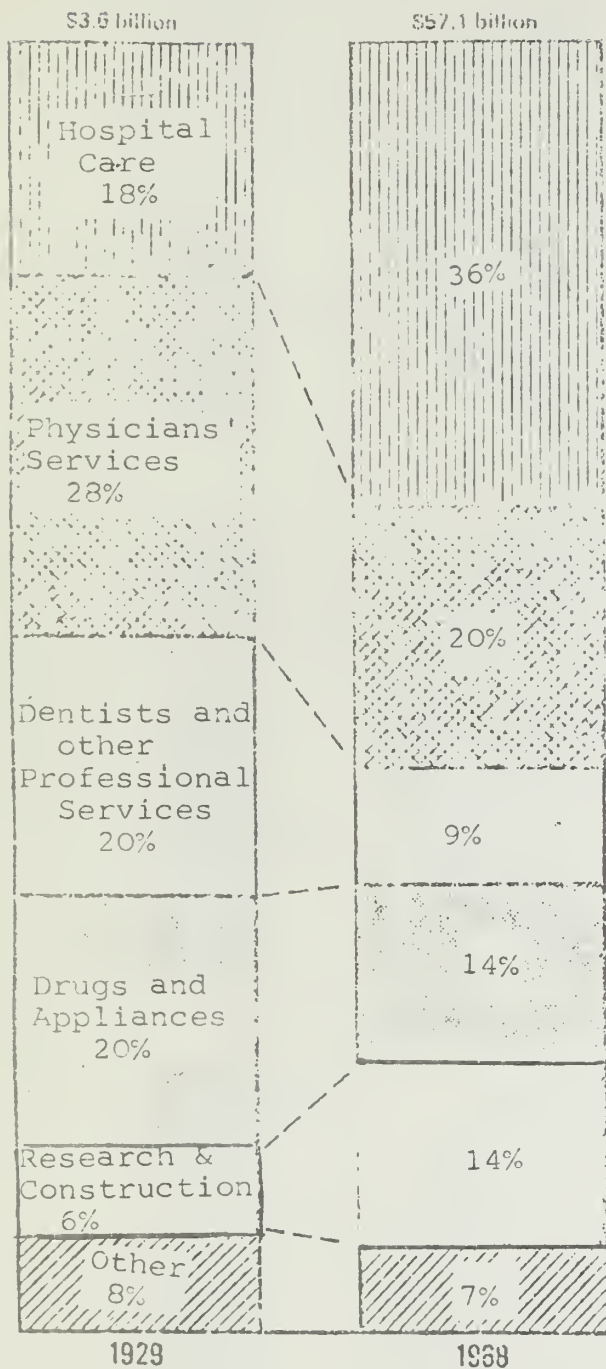
I-1

Distribution of public and private social welfare expenditures, by the major functions of health, education, and income maintenance and welfare, fiscal years 1950, 1960, and 1969

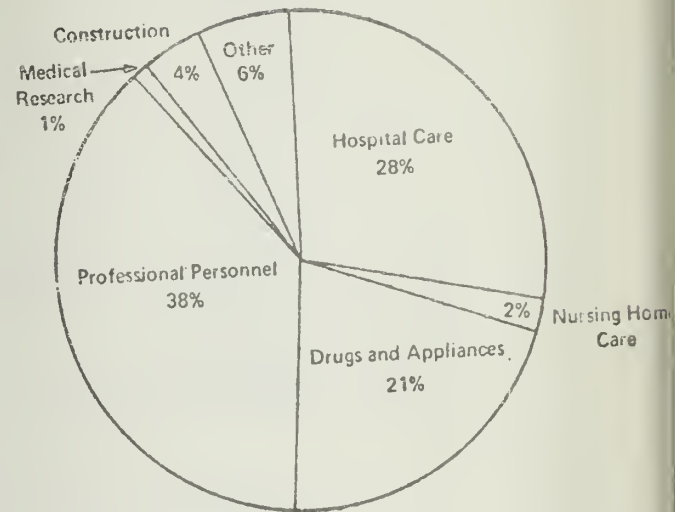


Source: Skolnik, Alfred M., and Sophie R. Dalos. "Social Welfare Expenditures, 1968-1969," Social Security Bulletin, 32:12:3-18 (December 1969), Chart 3.

Distribution of health expenditures, by type, 1929 and 1968,
and distribution of private and public health expenditures,
by type, 1968

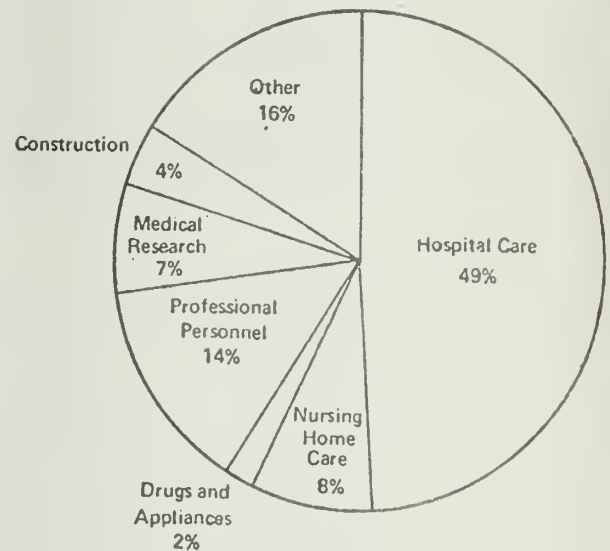


Private Expenditures



Total \$35.9 billion

Public Expenditures



Total \$21.2 billion

Source: Rice, Dorothy P., and Barbara S. Cooper. "National Health Expenditures, 1929-68," Social Security Bulletin, 33:1:3-20 (January 1970), Chart 2 and Chart 3.

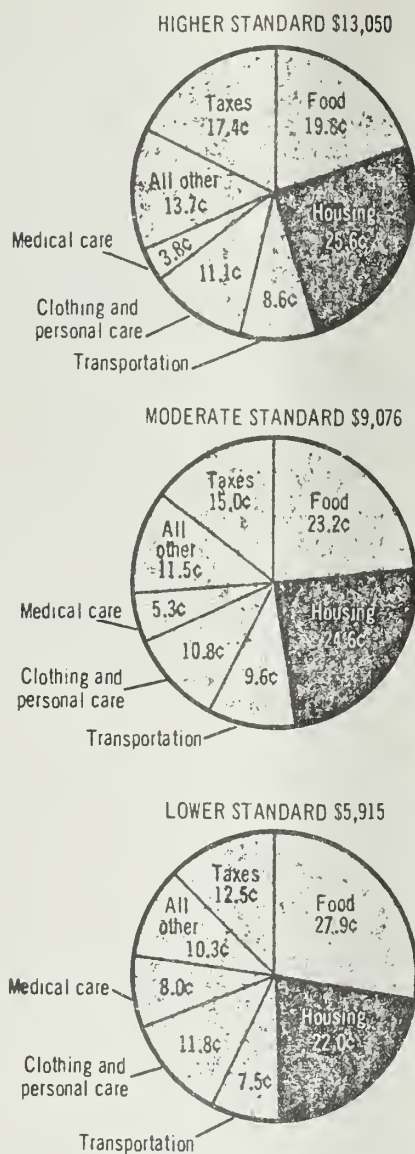
EXPENDITURES AND FAMILY INCOME

In part, the importance of health and medical care in the public dollar reflects the fact that the cost of illness becomes more burdensome to families as their income drops -- not infrequently because poor health results in reduced earning power. Thus, to the extent that government assumes responsibility for helping the disadvantaged, the associated public programs are burdened with a disproportionate share of illness problems. This burden of illness is also illustrated by the following diagram which shows the increasing proportion of the urban family's dollar that goes to medical care as living standards are lowered.

Chart 6

Chart 6

**URBAN FAMILY
LIVING STANDARDS** | **WHERE THE DOLLAR GOES**
Spring 1967 | Urban United States



Source: Brackett, Jean C. "New BLS Budgets Provide Yardsticks for Measuring Family Living Costs," Monthly Labor Review, 92:4:3-16 (April 1969), p. 12.

RELATIVE IMPORTANCE OF EXPENDITURES FOR MEDICAL CARE
BY GEOGRAPHIC AREA

A recent publication of the Bureau of Labor Statistics entitled, Relative Importance of Components in the Consumer Price Index, 1968-1969, updates the relative importance ratios of the individual items in the Consumer Price Index on the basis of differences in the rates of price change among the various items since their importance was established by adopting weights derived from a survey in December 1963 of expenditures patterns of urban families. The importance attached to expenditures for medical care averaged 6.25 percent of the Consumer Price Index in December 1969, virtually unchanged from the 6.26 percent of a year earlier. In contrast to this U.S. City Average, the importance of medical care within the Consumer Price Index in 23 selected metropolitan areas ranged from 5.17 to 7.69 percent, with an importance of 5.53 percent in Boston.

Thus, at the federal, state and local level, the importance attached to various aspects of the health care dollar varies with the source of the dollar, the type of expenditure, the period of time and geographic area under examination. (For a more thorough discussion of these distinctions, See Klarman, 1970). But, whatever statistical indicators are used, the importance of the health care dollar remains and this enhances the role of the Rate Setting Commission which is concerned with establishing the level of dollar payments to the providers of health services.

HEALTH SPENDING IN MASSACHUSETTS

As compared with the nation as a whole, the importance of the health care dollar is enhanced within the confines of the Commonwealth of Massachusetts. Not only is this state replete with medical schools, hospitals and physicians with international reputations, but it has been estimated that nearly one-third of the budget of the Commonwealth was devoted to health and medical care in 1969. (See Linsky, 1970.) In addition, the trends with respect to the "price", "cost" and expenditures" on medical care that were noted nationally serve to further enhance the importance of health spending in the Commonwealth. Thus, for example, as compared to the 24 percent change in the medical care component of the Consumer Price Index between June 1966 and December 1969, in a comparable three and one-half year period (from July 1966 to January 1970), the "price" of medical care in Massachusetts has increased by 30 percent. Details of the price changes for all items and medical care components are summarized for the Commonwealth in the following special tabulations by the Bureau of Labor Statistics.

Table 6, Table 7 and Table 8

Consumer Price Index for urban wage earners and clerical workers:
 Boston, Massachusetts: All items, 1947 Forward--
 Series A-11

(1957-59=100)

Date	1947	1948	1949	1950	1951	1952
January	74.6	82.0	82.5	81.4	87.0	90.2
February	74.0	81.0	81.2	81.2	88.0	89.9
March	75.5	80.9	81.8	81.7	88.1	89.7
April	75.0	82.2	81.8	81.7	88.0	89.7
May	74.6	82.5	81.7	82.0	88.3	90.2
June	75.5	83.5	82.2	83.0	88.5	90.4
July	76.3	84.7	81.9	83.8	88.7	91.8
August	77.6	84.8	82.5	84.3	88.9	91.8
September	79.7	85.0	83.3	84.3	89.1	91.4
October	79.1	84.4	82.6	85.0	89.9	91.5
November	79.6	83.9	82.6	85.1	90.2	91.0
December	80.6	82.9	82.0	85.8	90.7	90.7
AVERAGE	76.8	83.1	82.2	83.3	88.8	90.7
Date	1953	1954	1955	1956	1957	1958
January	90.5	91.0	91.2	92.5	96.0	99.6
April	90.2	91.1	91.5	93.0	97.0	100.5
July	91.3	91.8	91.8	95.1	98.5	101.2
October	91.8	91.6	92.4	96.3	98.5	101.2
AVERAGE	91.0	91.4	91.8	94.5	97.8	100.7
Date	1959	1960	1961	1962	1963	1964
January	101.2	102.0	104.4	106.2	108.6	110.1
April	101.0	103.6	104.9	107.1	109.2	110.6
July	101.4	103.9	105.2	107.2	109.8	111.2
October	102.3	104.2	105.4	108.2	110.0	111.6
AVERAGE	101.5	103.6	105.1	107.4	109.5	111.1
Date	1965	1966	1967	1968	1969	1970
January	112.3	113.9	118.6	121.7	127.9	136.1
April	112.9	116.8	118.8	123.6	129.8	137.9
July	113.5	117.1	119.9	124.7	132.1	139.5
October	113.6	118.5	120.8	126.6	134.7	142.3
AVERAGE	113.2	117.0	119.8	124.7	131.8	

* Beginning January 1964 the index structure has been revised. A description of the new index is available on request.

** Includes single workers beginning January 1964.

Source: U.S. Department of Labor
 Bureau of Labor Statistics
 New England Regional Office
 Boston, Massachusetts

Table 7

Consumer Price Index for urban wage earners and clerical workers:
Boston, Massachusetts: Medical care--Series F-11

(1957-59=100)

Date	1947	1948	1949	1950	1951	1952
January	60.7	63.1	67.4	71.1	73.4	76.7
February	60.7	63.1	67.4	71.1	73.4	76.7
March	60.9	65.1	67.8	71.7	74.0	76.8
April	60.9	65.9	67.8	71.7	74.0	77.0
May	60.9	66.0	67.8	71.7	74.0	77.0
June	61.0	65.4	68.5	71.8	74.1	77.9
July	60.7	65.4	69.8	71.8	74.1	78.2
August	60.7	65.6	70.0	71.8	74.3	78.2
September	60.9	65.6	70.3	71.8	74.0	79.6
October	60.9	65.6	70.3	71.8	74.3	79.6
November	60.9	65.7	70.3	71.9	74.4	79.6
December	61.3	65.7	70.3	72.8	76.2	80.1
AVERAGE	60.9	65.2	68.9	71.8	74.1	78.2
Date	1953	1954	1955	1956	1957	1958
January	80.2	80.9	80.9	83.5	89.9	100.4
April	80.2	80.9	80.9	83.6	91.7	100.7
July	80.4	80.8	81.3	88.8	96.6	101.8
October	80.8	80.8	82.1	89.2	96.9	102.1
AVERAGE	80.4	80.9	81.5	86.8	94.7	101.5
Date	1959	1960	1961	1962	1963	1964
January	103.2	104.9	108.3	111.9	113.8	117.0
April	103.4	105.3	108.5	113.0	115.4	118.2
July	103.6	105.9	109.2	113.0	115.4	118.4
October	104.5	106.2	109.8	113.4	116.4	120.8
AVERAGE	103.8	105.9	109.2	113.0	115.4	119.0
Date	1965	1966	1967	1968	1969	1970
January	122.1	124.9	133.8	144.4	155.9	166.5
April	122.4	127.3	133.6	145.0	157.3	168.0
July	123.6	127.7	136.5	147.1	159.3	169.8
October	124.4	131.4	141.3	153.4	164.1	175.5
AVERAGE	123.4	128.6	137.3	148.4	160.0	

Source: U.S. Department of Labor
Bureau of Labor Statistics
New England Regional Office
Boston, Massachusetts

Table 8

Consumer Price Index for urban wage earners and clerical workers:
 Boston, Massachusetts: Indexes of medical care costs

(July 1964=100)

INDEXES OF PRIVATE ROOM RATES

	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
January	106.9	113.1	136.0	154.4	176.4	204.8
July	108.3	115.9	140.8	156.6	178.5	

INDEXES OF SEMI-PRIVATE ROOM RATES

	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
January	107.4	110.9	131.8	151.7	173.8	200.1
July	107.7	112.6	137.1	154.4	174.6	

INDEXES OF OPERATING ROOM RATES

	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
January	100.0	100.0	125.9	141.2	164.7	201.9
July	100.0	105.9	120.0	152.9	164.7	

INDEXES OF X-RAY SERIES, UPPER G.I.

	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
January	100.0	100.0	104.2	104.2	116.7	120.8
July	100.0	100.0	104.2	104.2	116.7	

INDEXES OF DAILY SERVICE CHARGES, PRIVATE AND
SEMI-PRIVATE ROOMS COMBINED

	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
January	107.2	111.8	133.5	152.8	174.8	202.0
July	108.0	113.9	138.5	155.2	176.2	

Source: U.S. Department of Labor
 Bureau of Labor Statistics
 New England Regional Office
 Boston, Massachusetts

HOSPITAL COSTS IN MASSACHUSETTS

With respect to hospital costs, the following special compilation of the Rate Setting Commission indicates that the average cost of a day of hospital care increased 30 percent from \$49.43 to \$64.01 between 1966 and 1968 and that the per diem cost more than doubled in the decade between 1958 and 1968.

Table 9

Table 9

Audited Departmental Per Diem Costs Weighted Averages

	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>% of Increase (Decrease) 1958 to 1967 to 1968</u>
<u>ROUTINE SERVICE COST</u>												
Administration and General	\$ 3.42	\$ 3.67	\$ 4.05	\$ 4.39	\$ 4.77	\$ 5.31	\$ 5.37	\$ 5.82	\$ 6.59	\$ 7.81	\$ 9.64	.81.87%
Repairs and Maintenance	1.09	1.10	1.05	1.03	1.02	1.10	1.08	1.13	1.23	1.36	1.54	41.28
Operation of Plant	1.30	1.28	1.30	1.32	1.41	1.40	1.43	1.47	1.55	1.63	1.84	41.54
Motor Service	.04	.04	.05	.05	.05	.03	.05	.05	.05	.06	.06	50.00
Laundry	.66	.67	.72	.75	.81	.85	.85	.89	.95	1.03	1.13	71.21
Linen	.26	.27	.27	.30	.32	.33	.35	.34	.35	.45	.36	38.46
Housekeeping	1.43	1.50	1.58	1.61	1.67	1.80	1.75	1.87	1.99	2.21	2.65	85.31
Dietary	3.60	3.66	3.81	3.86	3.89	3.99	4.09	4.17	4.39	4.59	5.18	43.89
Maintenance of Personnel	.17	.15	.16	.17	.18	.17	.18	.18	.15	.16	.11	(35.29)
M. & S. Salaries	.53	.55	.63	.68	.82	.79	.83	.81	1.02	1.28	1.04	96.23
Supplies & Expense	.54	.55	.65	.66	.75	.75	.77	.86	.84	.88	1.00	85.19
Nursing Service	6.73	7.00	7.48	7.86	7.97	8.53	8.84	9.54	10.62	12.52	15.11	124.52
Nursing Education	.80	.84	.89	.88	.90	.81	.85	.96	1.00	1.08	.92	15.00
Pharmacy General	.24	.25	.23	.23	.19	.18	.19	.18	.19	.17	.20	(16.67)
Medical Records	.40	.41	.43	.44	.47	.53	.55	.57	.63	.73	.84	110.00
Social Service	.23	.26	.26	.24	.25	.31	.24	.27	.29	.30	.27	17.39
Other	.36	.20	.25	.27	.23	.43	.37	.20	.27	.31	.12	(66.67)
TOTAL ROUTINE	\$41.80	\$22.40	\$23.81	\$24.74	\$25.70	\$27.31	\$27.85	\$29.31	\$32.11	\$36.57	\$42.01	92.71%
								\$28.30*	\$30.97*	\$35.16*		14.83%

continued on Page 2

% of Increase
(Decrease)
1958 to 1967 to
1968 1968 1968

SPECIAL SERVICE COST

	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	% of Increase (Decrease) 1958 to 1967 to 1968 1968 1968
Operating Room	\$ 1.96	\$ 2.07	\$ 2.26	\$ 2.41	\$ 2.57	\$ 3.01	\$ 2.98	\$ 3.40	\$ 4.19	\$ 4.79	\$ 5.47	179.08% 12.43%
Delivery Room	.75	.79	.87	.92	.89	1.08	1.01	1.08	1.44	1.53	1.39	85.33 (9.15)
Anesthesia	.61	.60	.68	.70	.76	1.05	.91	1.01	1.05	1.17	1.31	114.75 11.97
X-Ray - Diagnosis	1.27	1.35	1.47	1.55	1.64	1.84	1.98	2.13	2.25	2.42	2.83	122.83 16.94
Therapy	.04	.04	.04	.05	.05	.06	.05	.09	.07	.08	.07	75.00 (12.50)
Lab/B.B./B.M.R./E.E.G./P.S.	2.24	2.47	2.71	2.90	3.16	3.76	3.83	4.44	4.67	5.17	6.25	179.02 20.89
E. K. G.	.18	.20	.22	.26	.28	.32	.36	.41	.41	.47	.51	183.33 8.51
Physical Therapy	.13	.12	.14	.14	.15	.18	.18	.22	.27	.31	.33	153.85 6.45
M. & S. Special	.62	.62	.63	.67	.76	.83	.99	1.26	1.22	1.48	1.93	211.29 30.41
Pharmacy Special	1.14	1.24	1.31	1.29	1.34	1.47	1.42	1.58	1.51	1.56	1.74	52.63 11.54
Other	.23	.21	.16	.35	.74	.36	.43	.34	.24	.29	.17	(26.09) (41.38)
TOTAL SPECIAL	\$ 9.17	\$ 9.71	\$10.49	\$11.24	\$12.34	\$13.96	\$14.14	\$15.96	\$17.32	\$19.27	\$22.00	139.91% 14.17%
TOTAL ALL-INCLUSIVE	\$30.97	\$32.11	\$34.30	\$35.98	\$38.04	\$41.27	\$41.97	\$45.27	\$49.43	\$55.84	\$64.01	106.68% 14.63%

NOTE: The above averages are the result of comprehensive audits of departmental costs in approximately 130 hospitals during the above stated periods and are weighted by patient days.

*Calculated before rounding.

Source: Rate Setting Commission
Commonwealth of Massachusetts
Boston, Massachusetts
May 11, 1970

SPENDING BY MASSACHUSETTS HOSPITALS

Total expenditures on hospitals have shown a similarly marked increase in the Commonwealth, such expenditures reflecting, in addition to the changes in the average cost of a day of inpatient care, the increase in the days of care that have been rendered. Thus, it will be noted from the data presented in the table below, that while the average cost per day increased 30 percent between 1966 and 1968, total expenditures by acute general hospitals in the Commonwealth increased 42 percent to \$427 million in 1968 and total inpatient days increased 5 percent to 6,672 thousand inpatient days. Regretably, audited information for the year ending September 30, 1969 are not yet available.

Table 10

Table 10

Expenditures, patient days and average cost per day of acute hospitals in the Commonwealth of Massachusetts, 1965-1968.

	1965	1966	1967	1968
All Hospitals				
Expenditures	266,235,604	300,999,435	357,538,896	427,262,350
Patient Days	6,187,839	6,349,041	6,672,864	6,673,960
Cost per day	43.03	47.41	53.59	64.02
Group I (Teaching) Hospitals				
Expenditures	9,027,841	102,510,921	119,351,768	144,883,864
Patient Days	1,743,249	1,772,869	1,803,149	180,146
Cost per day	51.79	57.82	66.19	80.43
Group II Hospitals				
Expenditures	92,085,360	103,412,423	124,028,946	144,970,542
Patient Days	2,314,291	2,349,818	2,488,254	2,523,092
Cost per day	39.79	44.01	49.85	57.46
Group III Hospitals				
Expenditures	83,871,503	95,076,091	114,208,182	137,407,944
Patient Days	2,130,299	2,226,354	2,381,461	2,349,722
Cost per day	39.37	42.70	47.96	58.48

Regretably, detailed information concerning the wage rate and payroll component of the expenditures by hospital is lacking. March 1969 is the date of the latest compilation by the New England Regional Office of the Bureau of Labor Statistics of the U.S. Department of Labor of their report concerning, earnings and supplementary benefits in hospitals for the Boston metropolitan area.

SPENDING BY THE COMMONWEALTH

From the point of view of the Commonwealth, major concern with health and medical care is centered in the 170 existing administrative units in the executive department of the Commonwealth that will for the most part be incorporated into the 34 agencies and nine cabinet offices that will comprise the human services grouping when reorganization is initiated in April 1971.¹

In preparation for this modernization program, the Mitre Corporation undertook a study for the Office of Program Planning and Coordination which revealed that in 1969 the 170 units to be incorporated into the Human Services Secretariat employed approximately 25,500 individuals and had a combined agency budget that totalled approximately \$696 million in 1969. (Cook, 1969 , pp. 7-8) While more than 50 percent of these individuals, over 15,000 people and about one-third of the state employment force, was employed by the Department of Mental Health, 72.8 percent of the budget of these agencies was accounted for by the Department of Public Welfare.

¹The cabinet offices will include, in addition to Human Services, Communities and Development, Education, Manpower Affairs, Consumer Affairs, Transportation and Construction, Environmental Affairs, Public Safety and Administration, the later to include sections concerned with Planning, Personnel, General Services and Finance.

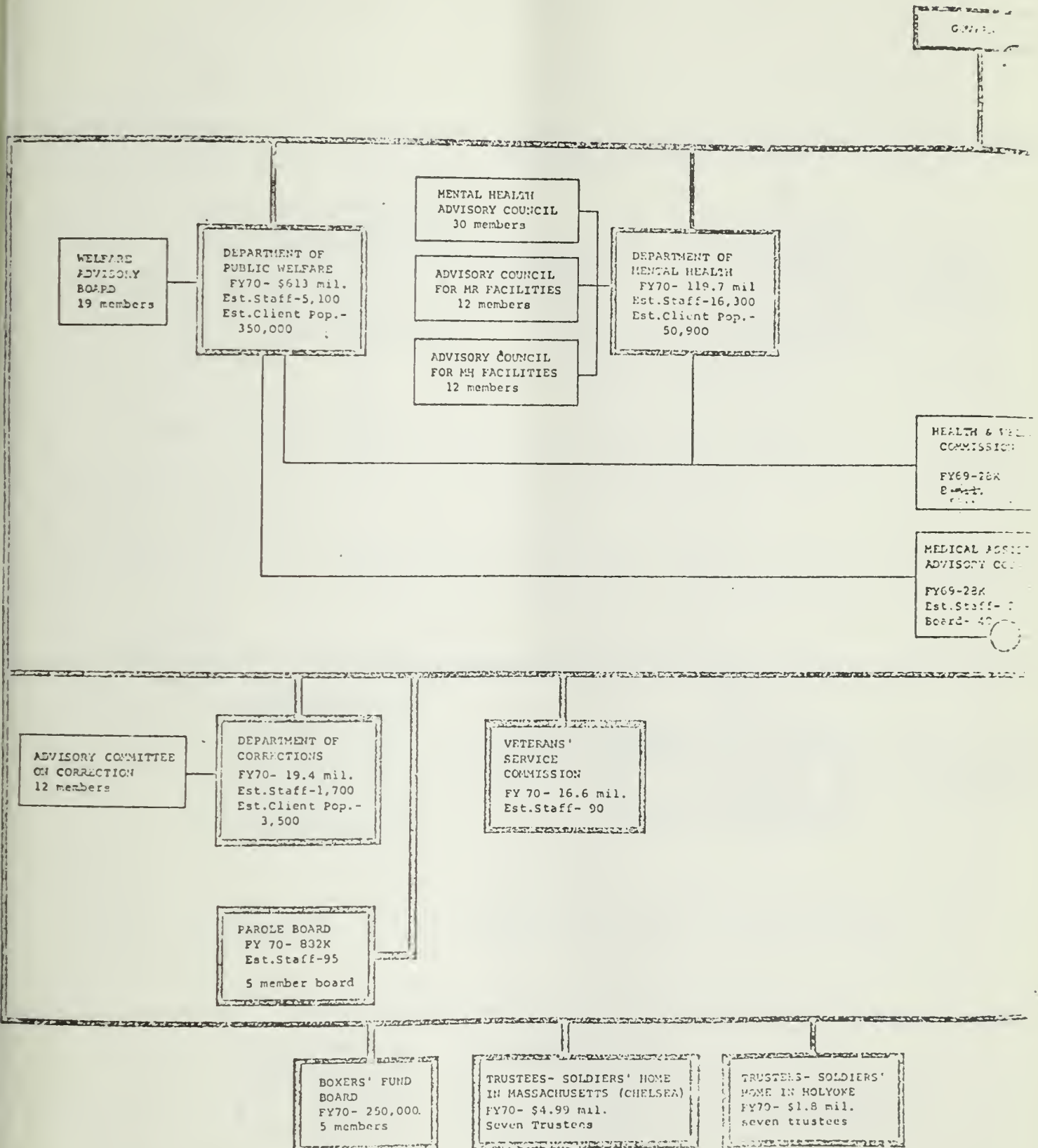
Figure 1, which follows, presents the details of this information as compiled in the Mitre Report. Besides the Department of Public Welfare, other major agencies on the basis of dollar expenditures are:

2. Department of Mental Health
3. Massachusetts Rehabilitation Commission
4. Department of Public Health
5. Department of Corrections
6. Veterans Service Commission
7. Massachusetts Commission for the Blind
8. Department of Youth Services.

A schema listing these agencies follows and a description of these agencies can be found in the Mitre Report D77-350 prepared for distribution on December 2, 1960 by Marvin F. Cook of the Mitre Corporation.

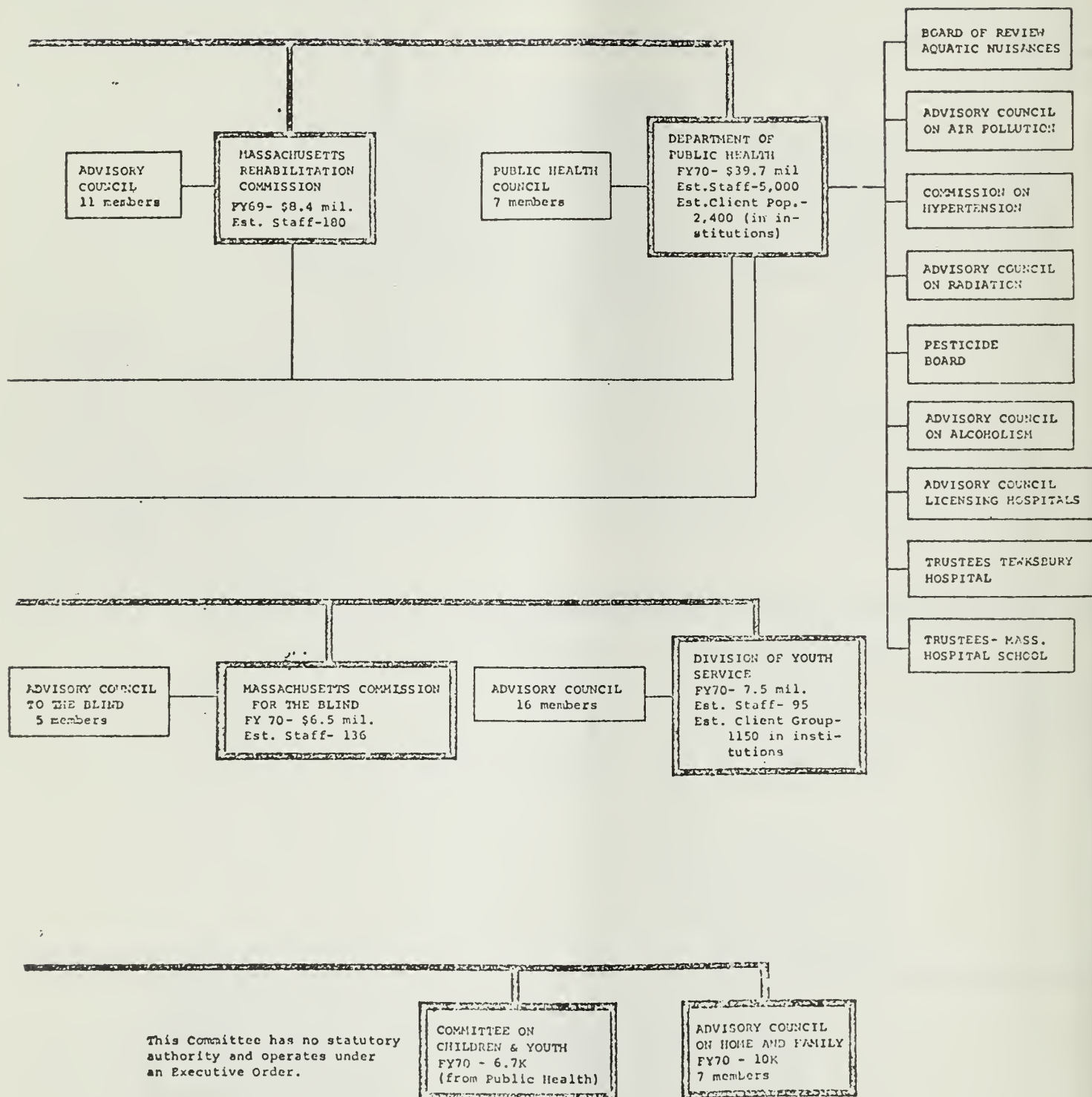
Figure 1

AGENCIES TO BE INCLUDED IN THE PROP.



Source: Cook, Marvin F. "Report D77-350" of the Mitre Corporation prepared for distribution on December 2, 1969 to the Office of Planning and Program Coordination of the Executive Office for Administration and Finance, Commonwealth of Massachusetts" (MS).
Bedford, Massachusetts: The Mitre Corporation, December 2, 1969.

HUMAN SERVICES SECRETARIAT



PRIMARY AGENCIES

SUBSIDIARY AGENCIES

MASSACHUSETTS PUBLIC EXPENDITURES BY TYPE

From the point of view of the Commonwealth, the major cost of health and medical care is derived from the cost of providing direct health care, usually to the publicly-aided case. Thus, of the \$370 million dollars spent in fiscal 1969, 83 percent or \$308 million is estimated to have been spent on direct health care (Linsky, 1970).

Activity	Massachusetts Health Care Expenditures in Fiscal Year 1969 (in thousands)
Total: All Programs	\$369,824
1. Direct Health Care	308,305
2. Administration	55,779
3. Environmental Health Care	2,474
4. Education and Training	1,827
5. Research and Planning	1,440

Source: Linsky, Martin A. "Health Care Dollars in Massachusetts State Government" (Preliminary Final Report) (MS). Boston: Harvard University Center for Health Services Research, February 7, 1970.

THE DEPARTMENT OF PUBLIC WELFARE IN MASSACHUSETTS

Approximately ninety-four percent of the cost of health and medical care provided to the publicly-aided case is financed through the Department of Public Welfare, reflecting in part the fact that 55 percent of the total expenditure for direct health care in the Commonwealth is accounted for by the Medicaid program alone (Linsky, 1970). More generally, however, the publicly-aided case for which the State is responsible represents approximately 20 percent of the total case-load of the hospitals in the Commonwealth, and a larger proportion of other types of inpatient care, such as is provided in nursing, rest and convalescent homes. As defined by legislation, the publicly-aided case would be "a person who qualifies for financial assistance from a governmental unit in meeting all or part of the cost of general health supplies, care, services and accommodations." (M.G.L. Chapter 7, Section 30L (b)).

More specifically, by type of medical vendor, the 94 percent of the payments accounted for by the Department of Public Welfare have been distributed in recent years as follows:

Medical Vendor	Payments in 1968 (Calendar year) (in millions)	Payments in 1969 (Calendar year) (in millions)
Acute hospitals	\$46	\$51
Chronic hospitals	31	36
Public medical institution	6	7
Outpatient hospitals	8	7
Nursing homes	64	72
Physicians	17	19
Dental	23	20
Drugs	19	21
Other	13	10
	<u>\$227</u>	<u>\$245</u>

Source: Commonwealth of Massachusetts, Department of Public Welfare, Boston, Massachusetts.

MEDICAL ASSISTANCE IN MASSACHUSETTS

Most of the 245 million dollars of care described above would be rendered individuals eligible for assistance from Title XIX of the Social Security Amendments of 1966. As noted on the detailed summary reports of the Department of Public Welfare which follow and the monthly reports which are compiled regularly, 96.7 percent of the total of \$245 million spent in 1969 by public assistance programs for medical services involved payments under Medical Assistance (MA) in contrast to General Relief (GR).

With a monthly average case-load of approximately 235,000 recipients in 1969, the Department of Public Welfare incurred Medical Assistance payments in 1969 of over one-quarter of a billion dollars. Approximately sixty-percent of the group receiving such benefits receives only Medical Assistance payments, that is recipients do not simultaneously receive income maintenance support through Old Age Assistance (OAA), Aid for the Disabled (DA), or Aid for Dependent Children (AFDC). However, some of the Medical Assistance only group may be receiving assistance through agencies ~~other~~ than the Department of Public Welfare under other categorical programs established by the Social Security Act which offer medical assistance through Title XIX as administered by the Department of Public Welfare. Similarly, some of the individuals whose medical bills are absorbed by the Department of Public Welfare may actually receive their medical care through programs administered by other agencies of the Commonwealth. However, by far the largest single group that is not self-supporting but is receiving support only through the Medical Assistance program is the institutionalized population in the nursing homes, who in January of 1970, for example,

accounted for nearly 20,000 individuals as compared to the total Medical Assistance case-load of 150,000 and the Medical Assistance only case load of just over 90,000 individuals.

Table 11, 11a, Table 12, 12a, Table 13, 13a

Public assistance payments in Massachusetts and federal, state, and local** share of these payments for calendar year ending December 31, 1969 compared to calendar 1968

Shares by Program	Calendar Year						Change
	1968		1969				
	Amount	Percent	Amount	Percent	Amount	Percent	
<u>ALL PROGRAMS</u>							
TOTAL	\$412 448 463	100.0	\$505 919 535	100.0	\$+ 93 471 072	+ 22.7	
Federal	188 932 508	45.8	230 477 455	45.5	+ 41 544 947	+ 22.0	
State	174 158 248	42.2	275 126 386	54.4	+100 968 138	+ 58.0	
Local	49 357 707	12.0	315 694	.1	- 49 042 013	N.C.	
<u>OAA : Old Age Assistance</u>							
TOTAL	48 808 872	100.0	68 585 633	100.0	+ 19 776 761	+ 40.5	
Federal	29 146 450	59.7	33 792 170	49.3	+ 4 645 720	+ 15.9	
State	16 494 234	33.8	34 791 819	50.7	+ 18 297 585	+110.9	
Local	3 168 188	6.5	1 644	*	- 3 166 544	N.C.	
<u>MA : Medical Assistance</u>							
TOTAL	222 387 609	100.0	237 639 827	100.0	+ 15 252 218	+ 6.9	
Federal	110 951 764	49.9	118 515 672	49.9	+ 7 563 908	+ 6.8	
State	90 225 708	40.6	118 833 364	50.0	+ 28 607 656	+ 31.7	
Local	21 210 137	9.5	290 791	.1	- 20 919 346	N.C.	
<u>AFDC : Aid for Dependent Children</u>							
TOTAL	107 363 354	100.0	149 136 332	100.0	+ 41 772 978	+ 38.9	
Federal	39 952 044	37.2	67 187 649	45.1	+ 27 235 605	+ 68.2	
State	51 834 573	48.3	81 947 458	54.9	+ 30 112 885	+ 58.1	
Local	15 576 737	14.5	1 225	*	- 15 575 512	N.C.	
<u>DA : Disability Assistance</u>							
TOTAL	17 440 486	100.0	22 474 977	100.0	+ 5 034 491	+ 28.9	
Federal	8 882 250	50.9	10 981 964	48.9	+ 2 099 714	+ 23.6	
State	6 139 001	35.2	11 492 727	51.1	+ 5 353 726	+ 87.2	
Local	2 419 235	13.9	286	*	- 2 418 949	N.C.	
<u>GR : General Relief</u>							
TOTAL	16 448 142	100.0	28 082 766	100.0	+ 11 634 624	+ 70.7	
Federal	0	0	0	0			
State	9 464 732	57.5	28 061 018	99.9	+ 18 596 286	+196.5	
Local	6 983 410	42.5	21 748	.1	- 6 961 662	N.C.	

N.C. Not comparable

* Less than .1 percent

** Represents local share of obligations incurred before July 1, 1968

Source: Commonwealth of Massachusetts, Department of Public Welfare, Division of Research and Planning, Boston, Massachusetts.

Public assistance payments in Massachusetts and federal, state, and local**share of these payments for fiscal year ending June 30, 1970 compared to fiscal 1969.

Shares by Program	Fiscal Year						Change	
	1969		1970					
	Amount	Percent	Amount	Percent	Amount	Percent		
<u>ALL PROGRAMS</u>								
TOTAL	\$452 498 633	100.0	\$563 952 574	100.0	\$+ 111 453 941	+	24.6	
Federal	208 823 363	46.2	254 711 773	45.2	+ 45 888 410	+	22.0	
State	237 254 040	52.4	309 177 246	54.8	+ 71 923 206	+	30.3	
Local	6 421 230	1.4	63 555	*	- 6 357 675	-	99.0	
<u>OAA</u>								
TOTAL	56 406 818	100.0	76 986 610	100.0	+ 20 579 792	+	36.5	
Federal	27 864 384	49.4	37 801 685	49.1	+ 9 937 301	+	35.7	
State	28 528 486	50.6	39 183 893	50.9	+ 10 655 407	+	37.4	
Local	13 948	*	1 032	*	- 12 916	-	92.6	
<u>MA</u>								
TOTAL	226 921 568	100.0	252 931 893	100.0	+ 26 010 325	+	11.5	
Federal	113 165 325	49.9	126 118 163	49.9	+ 12 952 838	+	11.4	
State	103 898 410	48.0	126 765 996	50.1	+ 17 867 586	+	16.4	
Local	857 833	2.1	47 734	*	- 4 810 099	-	99.0	
<u>AFDC</u>								
TOTAL	128 096 621	100.0	172 765 693	100.0	+ 44 669 072	+	34.9	
Federal	58 141 299	45.4	78 513 800	45.4	+ 20 372 501	+	35.0	
State	69 656 022	54.4	94 251 368	54.6	+ 24 595 346	+	35.3	
Local	299 300	.2	525	*	- 298 775	-	99.8	
<u>DA</u>								
TOTAL	19 698 396	100.0	25 190 231	100.0	+ 5 491 835	+	27.9	
Federal	9 652 355	49.0	12 278 125	48.7	+ 2 625 770	+	27.2	
State	10 040 083	51.0	12 911 911	51.3	+ 2 871 828	+	28.6	
Local	5 958	*	195	*	- 5 763	-	96.7	
<u>GR</u>								
TOTAL	21 375 230	100.0	36 078 147	100.0	+ 14 702 917	+	68.8	
Federal	0	0	0	0				
State	20 131 039	94.2	36 064 078	100.0	+ 15 933 039	+	79.1	
Local	1 244 191	5.8	14 069	*	- 1 230 122	-	98.9	

* Less than .1 percent

** Represents local share of obligations incurred before July 1, 1966

Source: Commonwealth of Massachusetts, Department of Public Welfare.
Division of Research and Planning, Boston, Massachusetts.

Table 12

Public assistance payments in Massachusetts for calendar year ending December 31, 1969 compared to calendar 1968

Average Monthly Caseload				
Calendar Year			Change	
Program	1968	1969	Number	Percent
OAA	43 577	53 331	+ 4 760	+ 9.8
MA	237 978	234 805	- 3 173	- 1.3
AFDC	41 106	50 797	+ 9 691	+ 23.6
DA	14 804	16 030	+ 1 226	+ 8.3
GR	11 410	15 910	+ 4 500	+ 39.4

Total Payment				
Calendar Year			Change	
Program	1968	1969	Amount	Percent
Combined	\$412 448 463 100.0	\$505 919 535 100.0	\$+ 93 471 072	+ 22.7
OAA	48 808 872 11.9	68 585 633 13.6	+ 19 776 761	+ 40.5
MA	222 387 609 53.9	237 639 827 47.0	+ 15 252 218	+ 6.9
AFDC	107 363 354 26.0	149 136 332 29.5	+ 41 772 978	+ 38.9
DA	17 440 486 4.2	22 474 977 4.4	+ 5 034 491	+ 28.9
GR	16 448 142 4.0	28 082 766 5.5	+ 11 634 624	+ 70.7

Average Monthly Payment per Case				
Calendar Year			Change	
Program	1968	1969	Amount per Case	Percent
OAA	\$ 83.73	\$ 107.16	\$+ 23.43	+ 28.0
MA	77.87	84.34	+ 6.47	+ 8.3
AFDC	217.66	244.66	+ 27.00	+ 12.4
DA	98.18	116.84	+ 18.66	+ 19.0
GR	120.13	147.09	+ 26.96	+ 22.4

Source: Commonwealth of Massachusetts, Department of Public Welfare, Division of Research and Planning, Boston, Massachusetts.

Table 12a

Public assistance payments in Massachusetts for fiscal year ending June 30, 1970 compared to fiscal 1969

Average Monthly Caseload					
Program	Fiscal Year		Change		
	1969	1970	Number	Percent	
OAA	50 481	55 347	+ 4 866	+ 9.6	
MA	237 263	229 526	- 7 737	- 3.3	
AFDC	45 857	56 932	+ 11 075	+ 24.2	
DA	15 391	16 685	+ 1 294	+ 8.4	
GR	13 271	19 722	+ 6 451	+ 48.6	

Total Payment									
Program	Fiscal Year				Change				
	1969		1970		Amount	Percent			
Combined	\$452 498 633	100.0	\$563 952 574	100.0	\$+ 111 453 941	+ 24.6			
OAA	56 406 818	12.5	76 986 610	13.7	+ 20 579 792	+ 36.5			
MA	226 521 568	50.1	252 931 893	44.8	+ 26 010 325	+ 11.5			
AFDC	128 096 621	28.3	172 765 693	30.6	+ 44 669 072	+ 34.9			
DA	19 698 396	4.4	25 190 231	4.5	+ 5 491 835	+ 27.9			
GR	21 375 230	4.7	36 078 147	6.4	+ 14 702 917	+ 68.8			

Average Monthly Payment per Case									
Program	Fiscal Year				Change				
	1969		1970		Amount per Case	Percent			
OAA	\$ 93.12		\$ 115.91		\$+ 22.79	+ 24.5			
MA	79.70		91.83		+ 12.13	+ 15.2			
AFDC	232.78		252.88		+ 20.10	+ 8.6			
DA	106.66		125.81		+ 19.15	+ 18.0			
GR	134.22		152.44		+ 18.22	+ 13.6			

Source: Commonwealth of Massachusetts, Department of Public Welfare, Division of Research and Planning, Boston, Massachusetts.

Table 13

Payments by the Massachusetts Department of Public Welfare
to vendors of medical care with other selected data for
calendar year ending December 31, 1969

VENDOR MEDICAL BILLS PAID DURING THE YEAR

TYPE OF VENDOR	BOTH PROGRAMS	MEDICAL ASSISTANCE						GENERAL RELIEF
		MA	SUPPLEM. MEDICARE					
			Deduct.	Coinsur.	Other MA			
TOTAL AMOUNT								
ALL VENDORS	\$245 045 708	237 031 345	2 388 505	2 492 892	232 149 948	8 014 363		
INPATIENT								
HOSP. ACUTE	\$ 51 809 300	46 454 606	637 028	437 767	45 379 811	5 354 694		
Recipients*	12 672	11 548	1 328	314	9 906	1 124		
Days' Care	1 344 519	1 203 460	XXX	46 336	1 157 124	141 059		
INPATIENT								
HOSP. CHRONIC	\$ 36 757 163	36 586 407	5 580	73 086	36 507 741	170 756		
Recipients*	8 651	8 606	12	22	8 572	45		
Days' Care	3 023 484	3 013 027	XXX	7 320	3 005 707	10 457		
PUBLIC MED.								
INSTITUTION	\$ 7 038 961	6 774 372	1 056	9 931	6 763 385	264 589		
Recipients*	1 745	1 683	2	7	1 674	71		
LIC. NURSING								
HOMES	\$ 71 733 282	71 611 503	XXX	371 394	71 240 109	121 779		
Recipients*	19 909	19 869	XXX	380	19 489	40		
OUTPATIENT								
DEPTS.	\$ 7 178 369	6 887 363	137 301	95 009	6 655 053	291 006		
Recipients*	42 440	41 078	773	1 207	39 098	1 362		
LAB. & RAD.								
SERVICES	\$ 728 010	708 439	98 479	53 249	556 711	19 571		
Recipients*	4 843	4 738	608	817	3 313	105		
PHYSICIANS	\$ 19 044 414	18 443 811	1 337 861	1 256 881	15 849 069	600 603		
DENTISTS	\$ 19 616 227	19 213 796	XXX	XXX	19 213 796	402 431		
OTH. LIC.								
MED. PRAC.	\$ 4 163 295	4 109 140	25 446	30 317	4 053 377	54 155		
DRUG SUPP.	\$ 21 462 489	20 920 489	XXX	XXX	20 920 489	542 000		
NOT CLASSI- FIED	\$ 5 514 198	5 321 419	145 754	165 258	5 010 407	192 779		

* Monthly average number

Source: Commonwealth of Massachusetts, Department of Public Welfare,
Division of Research and Planning, Boston, Massachusetts.

Payments by the Massachusetts Department of Public Welfare
to vendors of medical care with other selected data for
fiscal year ending June 30, 1970

VENDOR MEDICAL BILLS PAID DURING THE MONTH

MEDICAL ASSISTANCE

TYPE OF VENDOR	BOTH PROGRAMS	MA	<u>SUPPLEM. MEDICARE</u>		OTHER MA	GENERAL RELIEF
			Deduct.	Coinsur.		
TOTAL AMOUNT						
ALL VENDORS	\$262 090 635	252 236 324	2 441 284	2 617 011	247-178 029-9	854 311
INPATIENT						
HOSP. ACUTE	\$ 57 723 049	51 232 011	659 536	481 171	50 091 298	6 491 038
Recipients *	13 201	11 930	1 304	401	10 225	1 271
Day's Care	1 431 448	1 268 827	XXX	46 449	1 222 378	162 621
INPATIENT						
HOSP. CHRONIC	\$ 39 124 702	38 808 525	7 295	97 256	38 703 974	316 177
Recipients *	8 009	7 934	12	22	7 900	75
Day's Care	3 103 709	3 086 268	XXX	8 070	3 078 198	17 441
PUBLIC MED. INSTITUTION	\$ 6 473 439	6 321 683	359	7 209	6 314 115	151 756
Recipients *	1 570	1 511	1	7	1 503	59
LIC. NURSING HOMES	\$ 77 382 618	77 235 417	XXX	303 299	76 932 118	147 201
Recipients	19 825	19 779	XXX	363	19 411	46
OUTPATIENT DEPTS.	\$ 9 466 190	8 979 374	150 090	106 829	8 722 455	466 816
Recipients *	50 631	47 660	775	1 223	45 662	2 971
LAB & RAD. SERVICES	\$ 889 876	865 297	87 904	57 017	720 376	24 579
Recipients	4 781	4 651	547	825	3 279	130
PHYSICIANS	\$ 19 622 025	18 821 463	1 353 095	1 347 906	16 175 462	740 562
DENTISTS	\$ 18 565 363	18 050 107	XXX	XXX	18 050 107	515 256
OTHER LIC. MED. FRAC.	\$ 4 714 609	4 608 049	26 012	30 644	4 551 393	106 560
DRUG SUPP.	\$ 22 366 821	21 683 112	XXX	XXX	21 683 112	683 709
NOT CLASSI- FIED	\$ 5 761 943	5 571 286	151 993	185 674	5 233 619	190 657

* Monthly Average Number

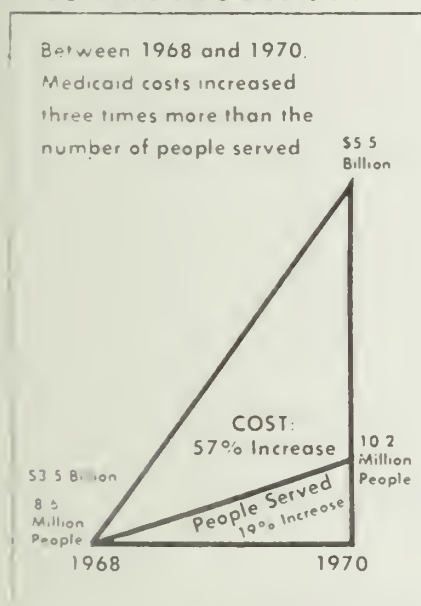
Source: Commonwealth of Massachusetts, Department of Public Welfare,
Division of Research and Planning, Boston, Massachusetts.

MEDICAID AND MEDICARE

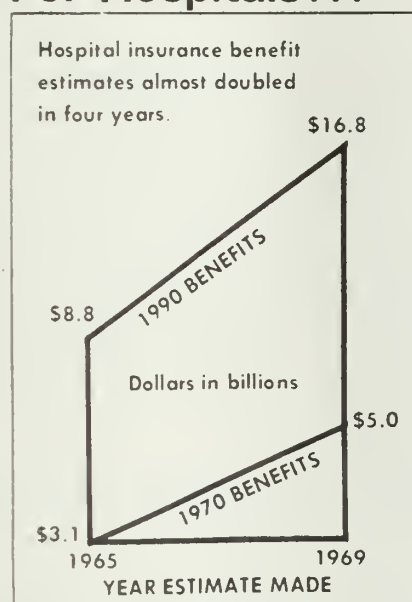
The large proportion of state funds devoted to Medicaid increases the sensitivity of the state to the price increases that were previously noted. For Medicaid in particular, the following table summarizes the national trends.

Chart 7

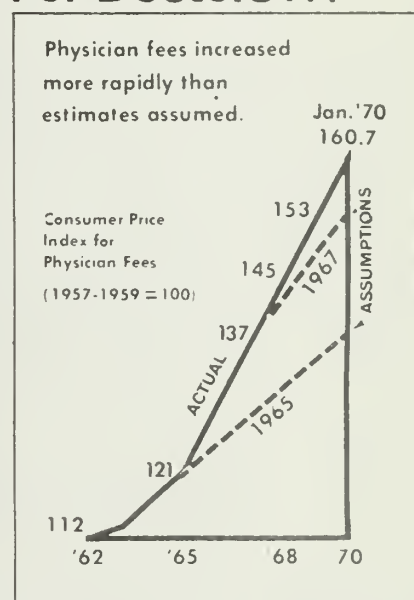
For Medicaid...



For Hospitals...



For Doctors...



...costs have increased faster than HEW anticipated

SOURCE: Senate Finance Committee

Source:

Federation of American Societies for Experimental Biology.
 "Medicare Medicaid Costs," Faseb Newsletter. Bethesda, Maryland, May 1970, page 2. Charts were developed by the U.S. Senate Committee on Finance through data supplied by the Department of Health, Education, and Welfare.



SECTION II: Powers and Responsibilities of the Rate Setting Commission

Major authority of the Rate Setting Commission is drawn from Massachusetts General Laws (M.G.L.) Chapter 7, Sections 30K-30P, as amended most recently by Chapter 492 of the Acts of 1968, and approved July 3, 1968.

Chapter 7 establishes the Commission within the executive office for Administration and Finance, outlines its procedures, and defines its authority with respect to the establishment of reimbursement rates to be utilized by all governmental units in purchasing care for all publicly-aided cases.

In addition to this authority, the Rate Setting Commission has the authority under Chapter 176A, Sec. 5, to approve contracts and rates of payment thereunder between any hospital service corporation, such as Massachusetts Blue Cross, Inc., and any provider of health services, including hospitals, nursing homes and pharmacies.

MEMBERSHIP OF THE RATE SETTING COMMISSION

The membership of the Rate Setting Commission includes the Commissioner of Administration or his designee, who is also the Chairman. At this time, the Chairman, as designated by Commissioner of Administration and Finance Charles R. Shepard, is John F. O'Leary, Esq., Special Counsel for Health Affairs. In addition, the membership includes four other members appointed by the

¹ This section has been in part based upon a memorandum dated October 29, 1969 concerning the "Powers of the Rate Setting Commission" which was prepared by Nancy Eager for Mrs. Helen G. O'Meara, Director of the Office of Comprehensive Health Planning. The assistance of Edward S. Hanley, III, Esq., of the Rate Setting Commission is also gratefully acknowledged.

Governor, including, a representative of organized labor (Salvatore Camelio) , a certified public accountant (Modest S. Mele, C.P.A.), and a person experienced in the field of medical economics (Professor Jerome Pollack). The fifth member of the Commission as presently constituted is Leon S. White, Ph.D., Associate Professor of Management at the Sloan Graduate School of Management, Massachusetts Institute of Technology.

PURPOSE

The general mandate of the Commission as defined under Section 30L of Chapter 7 of the General Laws is to "have the sole responsibility for establishing fair and reasonable rates of payment to be used by governmental units, including the division of industrial accidents and the department of labor and industries, and for establishing fair and reasonable charges to be used by state institutions for general health supplies, care services and accommodations."

As defined in Chapter 7, Section 30K(c), "General health supplies, care, services and accommodations", are to include: "all supplies, care, and services of a medical, dental, surgical, psychiatric, therapeutic, diagnostic or geriatric nature, including inpatient and outpatient hospital care and services and accommodations in hospitals, sanatoria, infirmaries, convalescent and nursing homes, rest homes and similar institutions" (G.L. C.7, s. 30K(c)).

SPECIFIC DUTIES AND POWERS OF THE COMMISSION

As specified under Section 30L, the Rate Setting Commission:

- 1) Must determine the following rates, after public hearing, at least as often as annually, and certify the rates so determined to the effected governmental unit:
 - a) the rates to be paid by each government unit to providers of health services;
 - b) the rates to be charged by each state institution for general health supplies, care, services, and accommodations;
 - c) rates of payment for general health supplies, care, services, and accommodations - these rates to be paid for services under the workman's compensation act.
- 2) May establish for rest homes and convalescent homes fair and reasonable classifications upon which any rates may be based;
- 3) Must upon request of the commissioner of insurance assist him in performance of his duties;
- 4) May enter into such contracts or agreements with the federal government, a political subdivision of the Commonwealth, or any public or private corporation or organization, as it seems necessary in the performance of its duties (so long as any such private corporation or organization makes or receives no payments based on rates that it sets;
- 5) Must promulgate rules and regulations for the administration of its duties and the determination of rates, subject to the laws of administrative procedure(G.L. C.30A).

STATUS OF RULES, REGULATIONS AND CLASSIFICATIONS

The status of rates, regulations and classifications determined by the Commission are defined in Section 30L of Chapter 7 as follows:

- 1) Each governmental unit must pay to a provider of health services and each state institution must charge as a provider of health services the rates for general supplies, care, services and accommodations determined and certified by the Commission;
- 2) Each rate established by the Commission has the power of a regulation and is reviewable;
- 3) Every rate, classification and other regulation established by the Commission must be consistent with the principles of reimbursement for providers' costs established under the Social Security Act (Titles XVIII & XIX (where applicable));
- 4) A copy of any rate, classification or other regulation must be filed with the budget director and with the house and senate committees on ways and means prior to its establishment.

Amendments to Section 30L approved on July 3, 1968, authorize the Commission to enter into "such contracts or agreements with the federal government, political sub-divisions of the Commonwealth, or any public or private organization, as it deems necessary", subject to certain constraints defined in the legislation.

ADMINISTRATION

As defined in Section 30M of Chapter 7:

- 1) The Commission is to establish:
 - a) a bureau of hospitals, sanatoria, and infirmaries and;
 - b) a bureau of convalescent, nursing and rest homes
 - c) it may also establish other bureaus it may deem necessary, subject to appropriations.
- 2) The Commission may appoint employees:
- 3) Government units must cooperate with the Commission.
- 4) State institutions must permit the Commission or its designated representatives to examine its books and accounts.
In addition, each state institution shall file with the Commission from time to time or on request such data, statistics, schedules or other information as the Commission may reasonably require.

Similarly, under Sections 30N, providers of health services which receive reimbursement or payment from any other governmental unit for general health supplies, services, and accommodations, must as a condition of the receipt of such reimbursement or payment

- 1) Permit the Commission to examine its books;
- 2) File data with the Commission;
- 3) Accept reimbursement at the rates established by the Commission.

Fines of not less than \$100 and no more than \$500 are established for providers of health services that knowingly fail

to file reports or knowingly falsify their contents. Furthermore, the Superior Court, upon summary hearing, may issue an order directing all governmental units to withhold making payment for general health supplies, care, services and accommodations to providers of health services that, without justifiable cause, refuse to permit any examination or to furnish information as required under Section 30N.

APPEAL PROCEDURES

Section 30 O defines the procedural requirements with respect to administrative and judicial review of rates. Any person, corporation or other party aggrieved by any rate established by the Commission or by the failure of the Commission to set a rate or take other action required by law may file an appeal with the Commission. On appeal the rate determined for any provider of services shall be adequate, fair, and reasonable as to such provider. The appeal shall be heard by a hearing officer, or, in such cases as the Commission may decide, by one member of the Commission. All such hearings shall be adjudicatory proceedings conducted in accordance with Chapter 30A and shall be commenced within 30 days of the filing of that appeal. Within 30 days after the conclusion of this hearing, the recommended decision shall be filed by the hearing officer with the Commission. Within 30 days after the filing of this recommended decision, the Commission shall either render a final determination or remand the appeal for further proceedings. Time limits are further specified in the legislation with

respect to such additional proceedings.

Any party aggrieved by a final determination of the Commission may within 30 days after the receipt of the final determination file a petition for review in the Superior Court of the County of Suffolk. Judicial review by the Court is governed by Section 14 of Chapter 30A.

Appeal procedures are further governed by the Commission's own Rules of Practice and Procedure and other rules and regulations adopted from time to time by the Commission.

QUASI-JUDICIAL POWERS OF THE COMMISSION

Under Section 30P of Chapter 7, the Commission is granted quasi-judicial powers. The Commission may summon witnesses, administer oaths, and require the production of books, records, and papers at any hearing before the hearing officer, upon any matter within its jurisdiction. In addition the Commission has subpoena powers pursuant to Chapter 30A, Section 12 of the Administrative Procedure Law.

MEDICAL CARE AND ASSISTANCE

Certain sections of Chapter 800 of the General Laws of Massachusetts are relevant to the work of the Rate Setting Commission.

Chapter 800 deals with the program of medical care and assistance in conformity with the provision of Title XIX of the Social Security Act (P.L. 89-97). Not only does this legislation determine the benefits that will accrue to the publicly-aided case, for which the Rate Setting

Commission establishes reimbursement rates, but Section 6, approved August 24, 1969, in accordance with the provisions of Executive Order 49 dated January 21, 1966, provides that the schedules in effect on January 1, 1969 for medical care and assistance provided under Massachusetts Title XIX shall continue in effect until June 30, 1970, in so far as such action does not violate federal law as specified in Section 10.

"Notwithstanding the provisions of any general or special law to the contrary, the fee schedules in effect on January 1, 1969, for medical care and assistance provided under the state plan, adopted in accordance with the provisions of Executive Order 49, dated January 21, 1966, and pursuant to and in conformity with the provisions of Title XIX of the Social Security Act (P.L. 89-97), shall continue in effect until June 30, 1970, insofar as such action does not violate federal law".

Acts of 1969, Chapter 800, Section 6

"The provisions of this act are severable and if any provision shall be in violation of any federal rule or regulation established by the Department of Health, Education and Welfare as a condition for receiving federal funds in connection with any program administered by said department, such provision shall be null and void and such violation shall not affect or impair any of the remaining provisions."

Acts of 1969, Chapter 800, Section 10

As presently interpreted, this so-called rate-freeze applies only to the charges for outpatient services rendered to Medicaid patients, and to certain other non-inpatient services they receive. Federal regulations on reasonable charges for services of individual medical practitioners published in the federal register on July 1, 1969, provide that in the current fiscal year (July 1, 1969-June 30, 1970), a revised state payment structure may be approved if it equates to no more than the 75th percentile of the ranges of customary

charges existing in the state on January 1, 1969. Handbook Supplement D-5360.1 of the Social Security Administration further provides that "... structures will be established which are designed to enlist participation of a sufficient number of providers of service in the program so that eligible persons can receive the medical care and services included in the Plan at least to the extent these are available to the general population." (Handbook Supplement D-5360.1).

The rate freeze was deemed not to apply to inpatient hospital services because it would have been in violation of federal requirements as stated in Section 1902(a)13(a) of the Social Security Act and the standards for reasonable costs issued there under issued in Handbook Supplement D-5360. Specifically, Section 1902(a)13(d) requires that the state Plan provide "the payment of reasonable costs (as determined in accordance with standards approved by the secretary and included in the plan) of inpatient hospital services provided under the Plan." (See Handbook Supplement D, Transmittal #122 and S.R.S. Program Regulation #40-4).

In a recent New York Federal Court ruling in Rockefeller, Ingraham, Wyman, and Hurd of the State of New York (defendants-appellants) vs. Catholic Medical Center of Brooklyn and Queens, Inc., Division of St. Mary's Hospital; Niagara Falls Memorial Hospital, and other hospitals similarly situated (plaintiffs) indicates that the issue is by no means settled.

In the brief of the State of New York on appeal from the decision of the three judge District Court, it was stated that:

Plaintiffs failed to establish that the reimbursement rate they received from the State during the period of the "freeze" did not provide them with "reasonable charges consistent with efficiency, economy and quality of care" which is the standard enunciated in 42 U.S.C. 1396a(a)(30). Nor was it shown at the hearing below how the State's method of reimbursement was in conflict with the requirement of 42 U.S.C. 1396a(a)(13)(D) that State plans for medical assistance must provide for "payment of the reasonable cost" of in-patient hospital services. Indeed, New York's method of reimbursing hospitals for in-patient services would appear to be in conformity with Supplement D-5364.3b of H.E.W.'s Handbook of Public Assistance Administration which provides:

"Allowance in Lieu of Retroactive Payments.--In those States where retroactive adjustments are not feasible, the State shall adjust current payments in the light of anticipated current reasonable costs. Ordinarily, a State agency will use a percentage adjustment of a hospital's reported costs to bring such costs in line with current levels as nearly as they can be estimated in advance. Where the State agency's payments exceed the actual level of reasonable costs, the hospital shall be required by the State agency to make the necessary adjustments."

OTHER RESPONSIBILITIES

In addition to its other responsibilities, as of September 5, 1969, the Rate Setting Commission was given authority by Chapter 909 of the Massachusetts General Laws "to approve as likely to be received during the year" the receipts that the city of Boston estimates will be obtained for general health supplies, care, services and accomodations. Since the estimated level of these receipts is used to offset some of the cost of providing these items in deriving the budget of the city of Boston, their anticipated level has a direct bearing upon the amount for which taxes need to be assessed in the city of Boston.¹

1. Chapter 909 is entitled, "An Act providing for deducting certain estimated receipts in computing the amount of which taxes are to be assessed in the city of Boston." This portion of the tax assessment deductions of the city of Boston, as approved September 5, 1969, by the Senate and House of Representatives in General Court states:

Section 4A of chapter 717 of the acts of 1957 is hereby amended by adding after the word "year" in line 15, the words:-; provided, however, that anything in this section to the contrary notwithstanding, deductions may be made on account of estimated receipts for general health supplies, care, services and accomodations up to such amounts as the rate setting commission in the executive office for administration and finance shall approve as likely to be received during the year.



SECTION III: RATES OF REIMBURSEMENT

As indicated in Section I, increases in the cost of health care have been the cause of growing concern. In recent months the Rate Setting Commission in filling its mandate as defined in Section II has adopted regulations and reimbursement rates that are designed to control the costs of health care. These rates relate to inpatient and outpatient hospital care as offered, on the one hand, to the publicly-aided case, on the other hand, to the industrial accident case under Workmen's Compensation.

In addition, the Rate Setting Commission has recently adopted regulations governing the rate of payments to be used by all governmental units in making payments to pharmacies for prescribed drugs, legend and non-legend, dispensed to publicly-aided individuals. Finally, the Commission is in the process of revising and instituting new rates for physician services and laboratory procedures rendered the publicly-aided individuals. Existing rules and regulations are also being reviewed for nursing and convalescent homes, rest homes, and a variety of other services currently purchased in accordance with fee schedules established in past years by the Massachusetts Department of Public Welfare.

1970 OUTPATIENT HOSPITAL RATES FOR THE PUBLICLY-AIDED PATIENT

On February 19, 1970, Emergency Rules and Regulations effective January 1, 1970 were adopted under G.L. c.7, ss.

30K-30P governing the determination of rates of payment to be used by all governmental units for inpatient and outpatient care provided to publicly-aided patients by hospitals, sanatoria and infirmaries. Emergency Regulation No. 70-3 and its successor, Regulation No. 70-6 relate to outpatient care provided to publicly-aided patients, other than those receiving care under the Commonwealth's Medicaid program who are subject to the rate-freeze as previously described (See page II-8). This rate-freeze terminated as of June 30, 1970, at which time Emergency Regulation No. 70-8

which is similar to Regulation No. 70-6 became effective for the determination of rates of payment to be used by all governmental units for outpatient care provided to publicly-aided patients under the Commonwealth's Medicaid program.

Essentially these regulations continue the previous practice of paying each hospital's billed charges as adjusted to conform with previous costs. This is accomplished by utilizing rates which are the product of the hospital's billed charges multiplied by a percentage. Charges relate to care provided during the current rate period. The percentage, however, is computed individually for each hospital by dividing its 1968 all-inclusive outpatient costs by its 1968 all-inclusive outpatient charges. The maximum percentage is 100 percent and thus the maximum rate of payment is 100 percent of charges. The percentages applied to charges, that is the basis for translating outpatient charges into reimbursement rates, are listed by hospital by the Rate Setting Commission. Changes in charges must be filed with, and approved by, the Rate Setting Commission. Thus, individual hospitals are supposed to file their charges with the Rate Setting Commission. However, in practice this is not always done, nor is it feasible. As a consequence, the listing of charges by hospital available at the Rate Setting

Commission is not always complete.

It should be noted that the adjustment of charges to conform to costs, as intended in the above procedure, is far from perfect. Indeed, at the time that charges are incurred, it is absolutely impossible to predict with complete accuracy either the expenditures or the volumes of services that will occur in the current accounting time-period for which reimbursement rates are being established. Thus, since statistics concerning both expenditures and volumes of services are required to derive costs per unit of service, it is equally impossible to compute for any hospital the "true" cost per unit of service on a current basis. Thus, the adjustment of charges to conform to costs must of necessity rely either on relationships established in prior accounting periods or await the completion of the current period when calculations can be executed on a retroactive basis.

1970 INPATIENT HOSPITAL RATES FOR THE PUBLICLY-AIDED PATIENT

In contrast to the outpatient rates which are based upon charges per item of service, Emergency Regulation No. 70-2 and its successor Regulation No. 70-5 effective April 1, 1970 and adopted April 22, 1970 promulgate an inpatient rate of payment for the publicly-aided case that is established individually for each hospital on a per diem basis. This rate is based on the 1968 per diem cost of the hospital adjusted into the current rate period by adding a Cost Projection Factor designed to recognize the reasonable and

necessary increases in cost between 1968 and the current rate period. This projection factor is calculated individually for each hospital and is based upon the average annual dollar change in per diem cost for that hospital between the 1965 and 1968 rate periods. The factor is then projected onto the 1968 per diem to develop a 1970 rate.

Specifically, the Cost Projection Factor is computed by (a) subtracting the 1965 per diem cost for that hospital from its 1968 per diem cost, (b) dividing that difference by three (to arrive at average annual dollar change in per diem cost), and (c) multiplying that quotient by two (to project the average annual dollar change in per diem cost into the current rate period). The rate for each hospital for the current rate period is then the sum of its 1968 per diem cost and its Cost Projection Factor as long as the rate does not exceed the sum of the hospital's 1968 per diem cost plus twenty-five per cent.

Moreover, in recognition of the fact that rates of growth may differ from hospital to hospital, these regulations specifically state that on appeal, the Commission may consider, inter alia, the following:

- "(a) those changes between rate periods from 1965 to 1968 and more current rate periods in a hospital's characteristics, "patient-mix", "service-mix", utilization patterns, and the hospital's control, or lack thereof, over such factors;
- (b) unusual expenditures designed to reduce the future annual operating expenditures of the institution;
- (c) the costs, reimbursement rates, and relative merits

of comparable services or groupings of services provided in hospitals that might provide appropriate care; and

- (d) the comparative costs of alternate means of meeting patient needs".¹

In returning to the all-inclusive per diem rate of payment for inpatient care and by thus challenging the health care industry to contain the costs of inpatient care within projected levels that are more nearly comparable to the rates of growth in other areas of the economy important to the nation's well-being, the Rate Setting Commission recognizes the importance of tempering the rate of increase in hospital costs. As long as hospitals are reimbursed in a fashion that assures their recovering whatever they spend, they are, if not actually stimulated to spend what they receive, at least not rewarded for improving the efficiency and effectiveness with which they render care.

It is the hope of the Rate Setting Commission that Emergency Regulation 70-2 and its successor Regulation No. 70-5 adopted April 22, 1970, by returning to the all-inclusive per diem rate reimbursement, will encourage hospitals to become more concerned with the productivity of their resources, the appropriateness of the services they offer, the efficiency with which they deliver this care and their overall effectiveness in meeting the health needs of publicly-aided patients in the Commonwealth.

¹ Commonwealth of Massachusetts, Rate Setting Commission. Regulation Number 70-5 effective April 1, 1970. Rules and Regulations under G. L. c. 7, ss. 30K-30P, Governing the Determination of Rates of Payment to be used by all Governmental Units for Inpatient Care Provided to Publicly-Aided Patients by Hospitals, Sanatoria and Infirmaries.

The Commission particularly hopes that scarce skills, expensive equipment and complex facilities will be more fully utilized in order that the productivity of all resources devoted to health may yield more and better care. The Commission also stresses the importance of maintaining the ability of each patient to receive appropriate care of high quality from the health care system as a whole.

Finally, the Commission hopes that the imposition of a prospective per diem will stimulate the industry to adopt more sophisticated management tools and assume more responsibility for self-regulation so that more refined and sophisticated measures of reasonableness and effectiveness can be developed and so that better standards of efficiency in hospitals can be devised. Only thus will it become possible to pay hospitals and evaluate their costs in the light of alternative ways in which comparable benefits might have accrued from public dollars with at least equally effective results for the patient and his family.

PROVISIONS FOR FINAL SETTLEMENTS IN PREVIOUS INPATIENT HOSPITAL RATES FOR THE PUBLICLY-AIDED PATIENT

In addition to the reimbursement rates for hospital inpatient care during the current rate period, the Rate Setting Commission is responsible for developing so-called "final settlements" for rates of payment utilized in previous accounting periods. Such settlements have not been paid to hospitals for publicly-aided patients since the inception of the Medicare in 1966. The need for such payments for 1967-69 arises

because the cost-based per diem reimbursement rate with projection factor being used since January 1, 1970 for the publicly-aided case is in sharp contrast to the "charge-based", "cost-pass-through reimbursement" system previously in use for publicly-aided cases and presently used for Medicare and Blue Cross payments. As with outpatient rates in 1970, for the four years prior to January 1, 1970, hospitals were paid for each case on the basis of a percentage of charges as currently incurred by each patient.

Under the 1967-69 system, the percentage adjustment applied to changes was to be determined for the interim period by the past relationship of costs to charges in the particular hospital in the previous accounting period, usually the preceding year. However, at the end of each accounting period, actual payments to every hospital were to be reviewed. Refunds were to be owed the program by a hospital whenever charges as reimbursed by the third-party had not been accompanied by counterbalancing expenditures on the part of the institution involved. Conversely, if payments actually received by any hospital in the accounting period were below the costs associated with the care of the patients for which reimbursement was sought, the Commonwealth was to be liable to the hospital for the balance of unpaid costs.

This so-called final settlement provision has yet to be implemented for the publicly-aided cases of the Commonwealth. Exact amounts due from or to each hospital for publicly-aided cases have not yet been computed, although the percentage adjustment to be applied has been audited for the years through

1968. Details of these computational procedures, both as they apply to the publicly-aided case and the Medicare program, are available upon request.

The fundamental assumption made throughout these calculations is that charges for all patients will bear the same relationship to charges for publicly-aided cases (or any other designated program) as costs for all patients will bear to the costs of caring for these publicly-aided cases (or those in the other designated program). Acceptance of this hypothesis permits costs for the publicly-aided case to be calculated given information on three items: 1) charges for the publicly-aided case; and 2) costs and 3) charges of the hospital as a whole. Costs for the publicly-aided case, thus calculated, can then be compared to interim payments to determine final cash settlements.

$$\frac{\text{Charges}_{\text{Publicly-aided patients}}}{\text{Charges}_{\text{All patients}}} = \frac{\text{Costs}_{\text{Publicly-aided patients}}}{\text{Costs}_{\text{All patients}}}$$

$$\text{Actual payments} - \text{Costs}_{\text{Publicly-aided patients}} = \text{Final Settlement}$$

The problem in Massachusetts has been that information on charges paid for the publicly-aided cases have not been aggregated by hospital from the individual billing slips received in the Department of Public Welfare, or in the many other departments purchasing medical care. Thus, two elements of the equation are missing, charges and costs of publicly-aided cases, and final settlements cannot presently be accurately calculated in accordance with the formula as specified in the regulations effective in previous years. Alternate proced-

ures will need to be developed by the Rate Setting Commission.

Were information on charges for the publicly-aided case not only available, but also available by type of service, each hospital could choose whether to determine the ratio of costs to charges for the institution as a whole or whether to determine this ratio departmentally. To the extent that the ratio of costs to charges may be unusually low in a few departments, as in the traditional revenue producing departments providing laboratory and radiology services, use of departmental data confines the influence of these low percentages to the departments involved and precludes the possibility of balancing these "profits" with costs incurred by other departments. Of course, if departmental data were utilized, the calculated costs of treating the publicly-aided case would need to be aggregated for all departments and compared to the actual interim payments received by the hospital in order to determine the final cash settlement, if any, due the institution. As previously indicated, however, this calculation is yet to be made for the institution as a whole, much less for its departmental activities.

HOSPITAL RATES FOR THE INDUSTRIAL ACCIDENT CASE

Regulation Number 70-7 effective January 1, 1970 filed May 21, 1970 with the Secretary of State, establishes rates of reimbursement to hospitals under Workman's Compensation programs for the industrial accident case. Essentially, these are similar to those established in 1970 for the publicly-aided case, except no ceiling is placed on inpatient rates

and an additional adjustment is included. Thus, outpatient rates are based on a percentage of charges and inpatient rates are an inclusive per diem based on the 1968 per diem cost of the hospital adjusted into the current rate period by adding a Cost Projection Factor designed to recognize the reasonable and necessary increases in cost between 1968 and the current rate period. However, in addition to this Cost Projection Factor, which is calculated as for the publicly-aided case but to which no twenty-five percent ceiling is applied, there is a specific adjustment which is designed to compensate the hospital for differences in the type of care received by the industrial accident case.

Since some hospitals receive only a few industrial accident cases and others receive a large number of exceedingly complex cases, the use of an average cost per day poses certain obvious problems. To the extent these cases do not utilize the same services per day as on the average is rendered to all patients, the cost of these cases is not equivalent on the average to the average cost of all patients. On the assumption that charges are designed to represent more nearly the costs of services actually rendered each individual case, an assumption that need not be true in all hospitals or at all times, the Rate Setting Commission has attempted to include an allowance in the per diem reimbursement rate for such differences in services.

This industrial accident allowance is calculated by div-

iding the so-called contractual write-off for industrial accident cases (that is the difference between charges and payments on behalf of these cases) by the numbers of days of inpatient care received by industrial accident cases, if such data are available and approved by the staff of the Rate Setting Commission. Until specific audited information on patient days of these cases is available, the contractual write-off is divided by fifty percent of the non-maternity inpatient days to calculate the addition to the reimbursement rate that will result from this adjustment.

CONVALESCENT AND NURSING HOMES RATES

Reimbursement rates for convalescent and nursing homes are established on the basis of information reported for the calendar year. In accordance with the Rules and Regulations effective on and after January 1, 1969, per diem reimbursement rates are calculated individually for each home on the basis of the reasonable cost of services provided, except that no rate will be less than \$7.00 per day and no rate will be greater than \$20.00 per day until the records of the individual nursing or convalescent home have been audited by the Commission.

In calculating the per diem rate of reimbursement, the operating costs considered in establishing the "reasonable" rate are divided by actual patient day census or 90 percent (85 percent in the case of homes classified by the Department of Public Health as "Extended Care Facilities") of total bed

capacity, whichever is the greater, for the same fiscal period. Thus, in contrast to the procedures utilized in the case of the determination of per diems for hospitals, below the 85-90 percent limit underutilization of bed capacity cannot be counterbalanced by increases in the per diem rate of reimbursement.

In calculating the reasonable cost of providing care, a number of special calculations are involved. Among these, are the following:

1. An allowance of 9 percent on reasonable equity capital based on 100 percent occupancy of total bed capacity.
2. A Make-up (down) Factor which is designed to recognize the true cost of services provided in 1968 as compared with the permanent rate of payment in 1968. This Factor is recomputed after the 1968 RSB-4 Cost Report is audited by the Rate Setting Commission and is equivalent to 80 percent of the difference between the 1968 rate of reimbursement and the 1968 cost as determined per "1968 Principles of Reimbursement". (See Regulation Number 70-12.)
3. An allowance in lieu of owners, officers, administrators salaries and management fees as determined from Schedule I of the Rules and Regulations, which is translated into a per diem allowance on the basis of 100 percent occupancy.

4. A Current Cost Adjustment Factor which will increase expenses, exclusive of interest and depreciation allowances, by 4 percent. Payroll expenses, however, may be adjusted separately. The first quarter per diem payroll for 1969 may be substituted for the one-hundred and four percent of the per diem payroll for 1968 that would otherwise be used.

5. In establishing capital costs and depreciation allowances after a change of ownership, after 1966 maximum construction cost and equipment cost valuations per bed are established in the rules and regulations based upon the age of the home (See #8b of the Specific Accounting Regulations.)

It will be noted that the above regulations do not differentiate rates on the basis of the type of care provided as classified by the Massachusetts Department of Public Health in accordance with the requirements of the Social Security Act. No attempt is made to differentiate the procedures utilized to establish rates for extended care facilities, intermediate care facilities and skilled nursing homes from those used for convalescent homes.

Studies

undertaken by the Massachusetts Department of Public Health indicate that in fact patients in the homes, including those providing more complex care, frequently "need" fewer hours of nursing care than the home is supposed to be providing for certification.

Other studies undertaken by the Department of Public Health clearly indicate that per diem costs of care in the nursing homes are not influenced by size of home, even in food and housekeeping items where decreases in the cost per patient day should -- it would be expected -- accompany increases in the size of the home as measured by a number of beds or patient days (See report of Systemation, Inc. (1969), and scatter diagrams prepared for Dr. David R. Kinloch, M.D., D.P.H., Director, Division of Medical Care of the Department of Public Health, Commonwealth of Massachusetts).

REST HOME RATES

Procedures for establishing reimbursement rates for rest homes providing care to the publicly-aided case under Chapter 7 of the Massachusetts General Laws are essentially similar to those used for nursing and convalescent homes. A per diem rate of reimbursement is established. This rate is then adjusted on an interim basis from the audited 1968 level by applying an adjustment of four percent of 1968 operating cost. As in the case of nursing and convalescent homes, the first quarter payroll of 1969 may be substituted for the 1968 payroll plus four percent. The details of the procedures utilized for rest homes are enumerated in the Rules and Regulations effective on or after January 1, 1969.

REIMBURSEMENT RATES UNDER BLUE CROSS CONTRACTS

As determined by the three-year contract expiring September 30, 1970, Massachusetts Blue Cross, Inc. (Blue Cross) is reimbursing participating providers of care for both inpatient and outpatient services on the basis of a percentage of a charge arrangement analogous to that previously used by the Commonwealth and now used only for certain sorts of outpatient care. The Rate Setting Commission must approve the contracts developed between Blue Cross and the providers. In addition, by contractual arrangement with Blue Cross, the Commission assumes responsibility for auditing data utilized by these groups in determining their reimbursement rates. In particular, the staff of the Rate Setting Commission verifies the actual expenditures of the providers and furnishes Blue Cross with the audited statistics, including the ratio of costs to charges for the hospital as a whole. These statistics are then used by Blue Cross in determining the costs and the cost-to-charge ratio which is required to calculate the final settlements due providers on behalf of Blue Cross patients. Procedures are analogous to those used by Medicare in the calculation of final settlements, although the ratios in this case obviously apply to Blue Cross patients rather than to those eligible for Medicare. At present, Blue Cross is completing its payments to hospitals of final settlements for the year ending September 30, 1968.

The costs utilized by Blue Cross and the hospitals in

determining final settlements are determined by the provisions of their contract. Thus, they need not conform exactly to the costs specified in the Hospital Statement for Reimbursement (HCF 400 Report) that are utilized by the Rate Setting Commission for the determination of rates of reimbursement for the publicly-aided case. Indeed, certain so-called "Plus Factors" that are included in costs utilized by Blue Cross are excluded from costs as defined by the Rate Setting Commission in the determination of reimbursement rates for the publicly-aided case. In particular, under the contract which was scheduled to expire September 30, 1970, bad debts, free care, price-level depreciation factor on buildings and fixed equipment, and replacement factor on major moveable equipment are treated as items of cost in the Blue Cross contract although they are treated as deductions from income by the Rate Setting Commission.

In addition to the contracts with providers of inpatient and outpatient hospital care, Massachusetts Blue Cross, Inc. has contracts with a variety of other types of facilities that provide inpatient care outside of the hospital setting. These facilities are termed extended care facilities, although in fact they encompass nursing homes and other institutions not certified by the Division of Medical Care of the Department of Public Health as "ECF's", that is as extended care facilities under the terms of the Social Security Act. Contracts with these groups are described in detail in a memorandum prepared for the Rate Setting Commission which

was dated May 4, 1970. This memorandum was prepared to provide the Commission with the background necessary to evaluate a new pilot program contract with selected facilities which would permit Blue Cross to pay these institutions as though they were hospitals rather than on the indemnity basis of \$6-12 per patient day utilized in the standard contract ECF-1 with non-hospital facilities. By providing more comprehensive coverage for inpatient care provided outside the hospital, Blue Cross hopes to lower costs by encouraging earlier discharge to less expensive facilities. This so-called pilot contract with extended care facilities is currently pending before the Rate Setting Commission.

REIMBURSEMENT RATES UNDER THE MEDICARE PROGRAM

Reimbursement procedures for the Medicare patient in Massachusetts are determined by the Social Security Administration of the U. S. Department of Health, Education, and Welfare. The administrative rules and regulations are summarized in a number of documents including Handbook Supplement D, Transmittal #122 and S.R.S. Program Regulation #40-4 as well as Section 1902(a)(13)d of the statute itself. From a practical point of view, however, the most extensive single source of up-to-date information is the two volume Medicare and Medicaid Guide published by the Commerce Clearing House, Inc. in cooperation with the Blue Cross Association.

These rules and regulations are applied in Massachusetts in the reimbursement of providers of care by the fiscal intermediaries representing the federal government. In Massachusetts, there are three such fiscal intermediaries, Massachusetts Blue Cross Association, Inc., Aetna Life and Casualty, and the Travelers Insurance Companies. Each provider of care must select one of these intermediaries with which to deal on a regular basis and through which to submit all bills for care rendered under the Medicare Program.

Since the rules and regulations that influence coverage under the Medicare program are determined nationally, detailed discussion of their implications lies outside the scope of this report which deals with the Rate Setting Commission of the Commonwealth of Massachusetts. For an extensive bibliography on the federal program, see the recent publication by the Social Security Administration of the U.S. Department of Health, Education, and Welfare entitled, The Impact of Medicare: An Annotated Bibliography of Selected Services (1970). For a discussion of issues, see the report of the staff of the Committee on Finance of the U.S. Senate concerning the Medicare and Medicaid programs (1970).

PHARMACY RATES FOR THE PUBLICLY-AIDED CASE

Regulation Number 70-4 and its predecessor, Emergency Regulation 70-1, govern the rates of payments to be used by all governmental units in making payments to pharmacies for prescribed drugs, legend and non-legend, dispensed to publicly-aided individuals. Regulation 70-4 authorizes payment to pharmacies for validly prescribed,

reimbursable legend drugs, including compounded legend drugs as well as compounded non-legend drugs, based on a dispensing fee of \$1.80 per prescription plus the wholesale ingredient cost as listed in the most current Blue Book or Red Book standard wholesale pricing catalogues. This use of a fixed dollar dispensing fee contrasts with the previous percentage mark-up policy of the Commonwealth which was declared in violation of federal regulations. The use of a dispensing fee thus insures the continuation of federal funds. It also limits the liability of the Commonwealth in contrast to a system of "usual and customary" as advocated in some circles. Regulation 70-4 also sets upper limits for the reimbursement of prescribed non-legend drugs equivalent to usual and customary charge or cost of the ingredients plus \$1.80, whichever is less. Regulation 70-4 was effective May 1, 1970

PHYSICIANS' SERVICES, LABORATORY SERVICES AND OTHER RATES OF REIMBURSEMENT

The Rate Setting Commission is currently in the process of establishing rates for independent laboratories that provide various types of clinical, chemical and pathological examinations on an outpatient basis. The Commission is also in the process of revising the fee schedule for physicians' services. The Commission also has authority to approve rates of reimbursement for the following services when they are provided to the publicly-aided case, when they are otherwise purchased by the Commonwealth, or when they are part of the

contractual arrangements between Massachusetts Blue Cross,

Inc. and participating providers of care:

Radiological (X-ray) services

Home health care services

Private duty nursing services

Clinical services

Dental services

Physical therapy and related services

Dentures and prosthetic devices

Eyeglasses prescribed by a physician skilled in the diseases of the eye or by an optometrist, whichever the individual may select

Periodic screening and diagnosis of individuals who are eligible under the State Plan for Medicare and are under the age of twenty-one to ascertain their physical or mental defects, and such health care, treatment and other measures to correct or ameliorate any chronic conditions discovered thereby, as may be provided in regulations of the U.S. Department of Health, Education, and Welfare Medical care or any other type of remedial care recognized under the laws of the Commonwealth furnished by licensed practitioners within the scope of their practice as defined by the laws of the Commonwealth.

Other diagnostic, screening, preventive and rehabilitative services;

Inpatient hospital services and skilled nursing home services for individuals sixty-five years of age or over in an institution for tuberculosis or mental diseases;

Any other care recognized under the laws of the Commonwealth, including ambulance services, oxygen, podiatry, and whole blood;

Transportation to obtain medical care.

SECTION IV: Paying the Hospital for the Publicly-Aided Patient:
Choices in Establishing Reimbursement Rates

In developing rates of reimbursement for hospitals caring for publicly-aided patients, a number of choices are open to the Rate Setting Commission. Some of the options applicable to the establishment of reimbursement rates may not yet be practical, as when their execution requires an electronic data processing capability which is not yet available to the Rate Setting Commission. Since such computational limitations are optimistically viewed as temporary, they are not treated as restricting the options from which the Commission can choose.

Other choices, however, involve the recognition of new technologies in subtler ways. Traditions and practices that were appropriate when most individuals assumed the burden of their own hospital bill only when and if they were sick, need reappraisal now that the major share of the risk of illness is born through prepayment by individuals that seem to be healthy. Furthermore, the growth of prepayment programs has so concentrated consumer power that more than two-thirds of the income of most hospitals is received from the three largest buyers of service, that is from the Medicaid, Medicare and Blue Cross programs.

Under these conditions, it is important to reevaluate the choices that are open to the Commission in establishing reimbursement rates. Some of these choices involve details of accounting definitions that determine the "costs" that are to be used in determining price. Others relate to the decisions concerning the unit to which a price is to be attached, be

this a day of care or an item of a particular type of service. Still other choices determine whether price is to be specific to each provider or may be applicable to groups of providers, thus introducing notions of efficiency and incentives. Finally, there are the considerations which relate to whether price is to determine cost or whether expenditure is automatically to lead to revenue. In part, this involves the question of whether rates are to be retrospective or prospective, but also it involves the question of whether the influence of rates on the hospital industry is to be explicit or implicit.

DOLLAR VALUE OF SERVICE: COSTS, CHARGES OR BUDGETS

In the preceding enumeration of the major types of choices involved in setting rates, it will be noted that no reference was made to the selection of costs or charges. In one sense, this is a real choice that must be made, that is decisions must be reached as to whether rates are to be based on past expenditures or on charges as currently established by the hospitals. In another sense, however, this is a deceiving way to pose the problem and one which is so fraught with emotion that it might well be avoided.

As has been previously suggested in the discussion of present rules and regulations for reimbursing hospitals, cost per unit of service, even if this is cost per diem of service, must be forecast at the inception of the accounting period for which the reimbursement rate is to be set. Whether such a "cost" will be equal to the "price" at the end of

the accounting period depends upon both the volume of services that are in fact produced and the extent to which expenditures conform to those that were anticipated at the inception of the accounting period.

By the same token, once "price" is established it can be kept equal to "cost" by manipulating expenditures or altering volumes of service. These statements all follow from the simple mathematics of the situation and the fact that some of the terms in the equations vary with time.

$$\frac{\text{Expenditures}}{\text{Volume of service}} = \text{Cost per unit of service}$$

$$\frac{\text{Revenues (income)}}{\text{Volume of service}} = \text{Price per unit of service}$$

If revenue starts to exceed expenditures in hospitals, that is if price exceeds cost per unit of service, it is possible to maintain equality by increasing expenditures and thus cost per unit of service. This would not be true of all industries. In the hospital field, however, fixed expenditures for major capital and plant are low, being only three times the annual operating budget of most institutions, and controllable expenditures for payroll are high, being two-thirds of the annual operating expenses of most hospitals. In economic literature, these latter wage and salary costs are traditionally considered to be subject to managerial control and to be variable with changes in

the volume of service.¹ (See discussion of these problems in Kaitz, 1968.)

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1. As discussed by Kaitz (1968), the problem is posed as follows:

"But the investment in plant, equipment, and working capital, as opposed to the operating budget, puts the average hospital into the big-business category. Our 130-bed hospital represents an historical capital investment of approximately \$3.6 million, only 25 per cent of which is invested in working capital. Based upon present construction costs of between \$25,000 and \$30,000 per bed, this typical hospital would now require \$4 million in plant and \$1 million in working capital. This scale of investment is clearly consistent with the general perception of big business. Thus, from an investment point of view, the hospital industry is both big business and, to the point of this discussion, capital intensive. From an operating point of view, however, it is labor intensive, since 65 per cent to 70 per cent of every expense dollar is spent for personnel. The financial implications here are serious--the plant and equipment are not directly involved in the output of medical care but merely provide the location for the output. Since the investment in bricks and mortar is substantial, and the concept of recovering depreciation allowances in the hospitals' pricing system is generally frowned upon,¹² the industry is reluctant to declare facilities obsolete. Many of the older, pavilion-type hospitals have physical layouts that were predicated upon a different medical technology, and are not only outmoded for modern, community-oriented hospital care, but also logistically expensive to operate. In light of increasing wage scales that cannot be compensated for by substantial increases in worker productivity, the cost of those outmoded facilities is substantial.¹³"

from Kaitz, Edward M. Pricing Policy and Cost Behavior in the Hospital Industry. New York: Frederick A. Praeger, Inc., 1968, p.8.

That many of these costs are treated as fixed expenditures is one of the peculiarities of the hospital field, reflecting the tendency for each institution to hire each June sufficient personnel to last through the next academic year. Even allowing for the heavy turn-over to be anticipated over the course of the year in the younger female segments of their labor force¹, and even allowing for the anticipated scarcity of nurses and para-professionals during the winter months, however, it is hard to reconcile such hiring policies of individual hospitals with optimal use of scarce resources by the hospital industry as a whole. Efficient handling of the "peak-load" problem is particularly difficult if hiring units are small².

Thus, despite the complications introduced by this tendency of the hospital industry to handle the labor shortage and peak-load problem by turning labor costs into expenditures that are fixed and inflexible for much of the accounting year, price and cost cannot be considered as independent of each other. Changes in earnings can influence expenditures and thus lead to shifts in costs. Equally, changes in costs can result in shifts in volumes of services and thus lead to changes in earnings, even without changes in prices.

¹See Kaitz (1968), for a full discussion of this problem.

²See in particular the work of Blumberg (1961), and Flagle. (1960 and 1961)

Therefore, with the passage of time, that is in a dynamic economic system, to the extent that there is a difference between a price that is based on cost and one that is a charge, it would appear to be pragmatic. If the "price" is derived from a schedule established by the hospital, it would appear that such a price is a "charge". If, in contrast, the reimbursement rate is based upon actual expenditures and volumes of service in prior accounting periods as audited by the Rate Setting Commission, it would appear that such a price is a "cost". As current cost adjustment factors are added to a "cost" as thus calculated by the Commission, the resulting reimbursement rate becomes a hybrid, albeit a reasonable one, which encompasses a variety of assumptions concerning the expenditure-service patterns that will prevail in the accounting period for which the rate is to apply.

From the practical point of view, the polemics of the cost-charge issue thus revolve about the predictability of expenditure and service patterns in hospitals. To the extent such predictability is imperfect, it is necessary to decide what weight to attach to past patterns in expenditures and services, on the one hand, and how to project and who should project these patterns into the future, on the other.

The obvious connecting link between costs and charges is, of course, the use of budgeted expenditures for the forthcoming accounting period which are translated into estimated costs or charges per unit of service on the basis of clearly defined estimates of anticipated volumes of service. The virtue of

the budget approach is that it makes the assumptions utilized in determining per unit estimates explicit rather than implicit. Changes in expenditures can be justified and anticipated shifts in volumes of service explained.

Such budgeted costs or budget-based charges are also potentially comparable among hospitals, thus avoiding the problems that would result were rates only derived from the experience of a particular institution. The knowledge that inter-hospital comparisons of budgets will occur would tend to counteract the tendency of an institution's staff to concentrate on maximizing the self-interest of its own staff, when such goals are not in accord with optimal use of resources from the community's point of view.

Another variant of the cost-charge problem, albeit of quite a different nature, relates to the third-party contract clause that provides for the payment of costs or charges, whichever is lower. Superficially, it would appear to be politically unwise for a third-party to pay more for the care received by a patient than the hospital would normally charge for these services had third-party coverage been lacking. However, it is quite clear that this may occur in individual cases when payment is based upon the average cost of the group. In such cases, the real issue is not even the cost or charge question, since had the payment been based upon average charges the bill for an individual might still be less than the average for the group. Rather, the underlying problem relates to the use of the average payment as such which implicitly implies that some individuals will incur more and others less than this average, be this an average

cost or an average charge.

For the group as a whole, however, it is still possible to ask whether costs should be paid when these are more than the charges that would have been incurred by the group. The logic of this question, however, is different from that which applies when concern centers upon the individual case. When the aggregate charges incurred by the group are less than the aggregate costs of their care as calculated using proper accounting techniques and audited data, the charge structure would appear to be inadequate because it prevents the hospital from recovering the full share of costs associated with this group or with any other large group of patients. Thus, since all patients are apparently being given a discount from costs, the third-party is essentially requesting the same treatment for its subscribers or beneficiaries. Thus, the cost-charge problem in this case becomes a question of equity with respect to the determination of the fair share of costs that are properly attributable to the third-party. To the extent, however, that the relationships between charges for items of service and their actual costs are sensitive to differences between expected and actual volumes of service that are rendered over the time of the accounting period, the magnitude and relative adequacy of aggregate charges vis-a-vis aggregate costs also reflects the same sorts of prediction problems that were discussed in the earlier portions of this section in connection with the cost-charge problem.

REAL UNIT OF SERVICE: PER DIEM, CAPITATION, CASE OR A LA CARTE

Not only does the cost-charge question get confused with the problem of predictability of expenditures and volumes of services, it also tends to be associated with the difference between a price that is levied on a per diem basis and one that is per item of each service utilized. This is unfortunate since clearly hospitals have traditionally used both types of prices. Most institutions levy a per diem "charge" for room and board as well as a series of charges per item of service for such services as radiological films or laboratory procedures which are billed to a patient as these are utilized. There is an unlimited range of combinations between the extremes of average all-inclusive per diem, as presently promulgated by the Rate Setting Commission for publicly-aided and industrial accident cases, and price per item of each service, as utilized under the charge structures presently applied to ancillary services rendered Blue Cross, Medicare and private patients.

Price per day

Per diems obviously offer the advantage of simplicity in the administrative and accounting sense. Price per day multiplied by the correct number of days of patient care is equivalent to the bill of the individual patient or of the patients for whom a third party insurer is responsible. If there is every reason to assume that the service rendered to the patients paying this per diem is also similar to the average service rendered per day by the institution as a whole to all its cases, it can even be claimed that the per diem method is not inconsistent with each patient, or each

group of patients, bearing their fair share of the cost of the services they actually receive.

The problem with the per diem is that once established, the temptation is either to "price-line" the product or to increase the number of days of care in order to increase the net revenue earned by the institution. Obviously, more days of patient care, with no change in monthly expenditure rates or the charge structure, will yield higher net incomes for the hospital. Conversely, of course, a sudden drop in use, which is more likely to be uncontrollable than a rise in utilization, could leave an institution seriously in debt. Of course, some of this problem could be avoided by having the per diem relate to the capacity of the hospital, that is per available bed day or some percentage thereof, rather than the actual day of patient utilization.

The "price-line" problem is subtler and one which has not received much attention. Essentially, however, as with shoes, the producer adapts the product to a known price. That this could be done in the hospital field has been suggested in some of the appeal hearings in which certain hospitals have pointed out that they could eliminate certain medical and surgical services, such as anesthesiology and pathology, currently included in the hospital's per diem. Were this to occur, there would obviously be a deterioration in the product with no change in price -- the "price-line" would be maintained at the expense of certain elements of "quality" or scope and range of service.

To the extent that certain of these types of costs can be covered either as physician services or as institutional

ones, however, such transfers need not necessarily affect the quality of the ultimate health care product received by the patient. Rather, the only result would be an increase in cost, because fee-for-service payments to physicians usually exceed those that would otherwise have been made if hospitals had employed these physicians on a salaried basis. Furthermore, within reasonable limits and to the extent that certain sorts of service need not be available in all institutions, it even becomes an advantage to encourage hospitals to "price-line" their product. Under these conditions, it then becomes critical to determine whether the essential ingredients to good medical care have been maintained for the types of cases being treated in each institution and to ascertain that for the community as a whole there is ready transferability of patients among institutions and access to the full range of services required to meet the needs of all types of cases.

In short, the issues with respect to per diem payments revolve around the extent to which, given a fixed per diem rate of reimbursement, institutions respond with changes in volumes of service or quality of care per day that benefit the patient and the community and result in the provision of more effective medical care for each dollar spent.

Cost per case

A cost per case approach has many of the attributes of the cost per day approach except that the relevant volume of service becomes number of cases rather than number of patient days. As a consequence, it is to the advantage of the hospital to reduce patient days associated with each case,

at least to the extent such a reduction is also associated with an actual decrease in the expenditure of the institution as a whole. If expenditures are indeed reduced when a case stays fewer patient days, a point which can be debated, then the cost per case approach would provide the hospital with incentives not just to reduce items of service but to encourage patients towards early ambulation and discharge into less expensive facilities.

As in the case of patient days, the seeming simplicity of the measure is deceiving. There are fewer admissions than patient days by an amount that is a function of average length of patient stay. Thus, since the numbers are smaller, the mix of services per admission-case may be even more difficult to predict than average daily mix of services. Furthermore, the physician may be as able to influence the number of admissions, as the number of days of inpatient care per case, at least when there is underutilization of hospital facilities.

Thus, it becomes necessary to ask whether a simple cost per admission is desirable, or whether there is need to define further the nature of each case by diagnosis, by age, or by some other characteristic of the patient population, such as insurance coverage, as when an additional allowance of $8\frac{1}{2}$ percent for nursing care is introduced to reflect the increased nursing requirements of the average elderly Medicare patient as compared to the average hospital case. At least theoretically, to the extent that objective measures of medical condition are available, such patient categories can be further refined by adding indices of severity of illness or of patient status at admission, after

evaluation, or following surgical intervention.

Again the problem is one of predictability and determining the attributes of the case with which costs will be associated, be this the particular individual, the admission, the diagnosis, the age, or some other condition. In this regard, certain sorts of costs may be more predictable on a case basis. These include, for example, those costs related to the laboratory, medical "work-up", and clerical services that are associated with each patient on admission. By the same token, certain other sorts of costs such as the patient's food and laundry may be more realistically associated with each day of hospitalization. (See, for example, proposal developed by Wood, 1970.)

It should perhaps also be pointed out that a case approach to payment is not new. Many obstetricians use such an approach in establishing fees for the pregnancy, regardless of its outcome. Hospitals too, even including in the quite distant past the Baker Memorial of the Massachusetts General Hospital, have utilized an all-inclusive rate that is established by type of diagnostic condition. Traditional pricing in certain sections of the hospital, as for example, in the operating room, further utilizes what might be termed a case approach in establishing an average charge for each case that uses departmental facilities which is independent of outcome or length of actual stay. Thus, for example, the open-heart case is not usually expected to incur all the direct costs associated with that particular operation.

How fine a breakdown to use in establishing a rate per case is thus at best difficult to determine. Indeed, if carried to extremes, the cost per case could become a cost per spell of

illness, alternatively, it could become a cost per item of service actually received, the distinction becoming one of whether price is oriented towards the actions of the consumer, that is the admission, or whether price is oriented towards the actions of the providers of service that prescribe procedures and therapies.

Conversely, it could be argued that a case basis, or even a per diem basis, becomes equivalent to a percentage share of total annual expenditures of the institution when large third party buyers and final settlements are involved.¹ This result could have been obtained more directly by defining payments on behalf of a given group of patients in terms of proportions of each hospital's total expenditures, weekly, monthly, or annual. The proportion to be used to determine the share of expenditures to be born by the group, such as the publicly-aided case-load, could then be defined not merely as charges which are a dollar-weighted measure of volume of service, but as their proportionate share of patient days by type of case admissions, or as their share as measured by some other more complex indicators of volume and range of service.

It should also be pointed out that there are numerous versions of a mixture of a cost-per-day and a cost-per-case approach, as in the cost-per-spell of illness approach (See Wood, 1970). Essentially, the spell of illness approach takes account

¹Essentially this is the principle evident in the present reimbursement procedure for Medicare cases and Blue Cross subscribers. Charges are adjusted to conform with costs by instituting a final settlement. Charges are also used as a weighted indicator of volume of service. Thus, the volume of service attributable to these cases is proportional to charges incurred on their behalf as a proportion of all charges. This proportion is then used to determine the proportion of total expenditures to allocate to the programs.

of average length of stay for different diagnostic conditions and thus attempts to convert per diem data into average per case payments by taking account of differences in medical need as a result of diagnosis.

Capitation Payments

As the emphasis shifts from the particular sick-patient case that is being treated to the population at risk, the payment base can be shifted from a payment per individual case that presents for treatment to a payment per individual regardless of whether the individual is sick or well. This latter type of capitation payment obviously encourages providers to prevent illness, albeit the arrangement also encourages participants to use services without regard to their cost.

In essence, once established, the capitation arrangement is equivalent to a zero price arrangement for the purchase of service. Nothing is lost by the consumer, nor gained by the provider, when a particular service is used. Whether or not such an arrangement is practical depends in large measure upon the extent to which the need for service can be determined independently of the price constraints upon the consumer that traditionally operate through demand. Equally, however, the feasibility of capitation payments depends upon the structure of the supply side of the market which is called upon to produce services that have no immediate price to those that are rendering the care.

In fact, of course, one of the problems in the present structure of reimbursement rates is that whereas individuals are paying for large segments of their medical care independently of their health status as subscribers in insurance

programs, these funds need to be redistributed to those who actually provide them service on some basis other than capitation. In other words, at the point service is rendered, it frequently has a zero price for the patient, that is the consumer, but not for the doctor or other providers. It is only when consumers restrain their choice and commit themselves to service arrangements in advance of illness, as with the large prepaid groups practice arrangements, that providers can become the insuring group and thus be recompensed on a capitation basis, and receive a zero price for any particular unit of service. Indeed, this use of capitation arrangements may be one of the prime advantages of the prepaid group practice arrangements such as the Health Insurance Plan of Greater New York, Kaiser Foundation Plan in California and now, more recently in Boston, the Harvard Community Health Plan and the newly proposed Sargent-Cronkite plan.

Item of service a la carte

Finally, of course, there is the traditional method of charging for services, as in the ancillary departments of most hospitals, in which each item of service is individually priced. In these ancillary areas, which include the laboratory, radiology department, special service areas and operating rooms, therefore, total charges as billed each patient depend upon the amounts and types of services utilized.

As previously indicated, this correspondence between utilization and charges need not correspond to that between utilization and costs, since operating costs may be joint and may need to be allocated among many types of service. Furthermore, even if associated with a specific service, many of these

operating costs are a function of units of time (as in the case of salaries) rather than volumes of service. In these cases, until the end of the accounting period, cost per unit of service is only as reliable as the estimated volume of care that is used in its calculation.

To the extent that there is reason to monitor volume of care, however, a charge structure based upon units of service makes the job easier, even if the volume of care actually rendered at the end of the accounting period differs from that utilized in developing the initial charge per unit of service at the start. Indeed, when there is reason to believe price influences use, a charge per item of service may be most appropriate. This influence might operate through the provider of care, whether a physician, pharmacist or institution, or it might work through the user of service. Thus, for example, fee-for-service arrangements have frequently been shown to encourage elective surgical procedures such as tonsillectomies and adnoidectomies. In more constructive fashion, in some of the groups of the Kaiser Foundation Plan, nominal charges for physician visits to the home have helped the doctor-patient relationship; the patient is no longer resentful when there is a denial of a home visit on the grounds that it is medically unnecessary because this denial now saves the patient money and deprives the physician of income. Thus, past experience suggests that the patient-provider relationship is most improved by judicious use of charges to temper the use of services when either the demand for or supply of these services include an unusually strong convenience, amenity, or elective component

that is sensitive to price.

Finally, the anomaly of the present structure of hospital charges should be emphasized. The decision to purchase the unit being priced, that is the item of ancillary service, is usually made by the physician rather than the patient who receives the service. Furthermore, the patient, who receives the service, usually does not pay the price as it appears on the bill. Thus, even when a charge is allegedly utilized, this price has been deprived of its traditional role of equilibrating supply and demand in the market place, at least for that large sector of hospital care that is procured through the Blue Cross, Medicaid and Medicare programs. Under these conditions, it is obviously necessary to reevaluate the role of price and redefine its functions.

Meanwhile, for that small remaining segment of the case-load that pays its own bill, payments to the institution correspond with the sum of the itemized charges and per diem room and board components. But even this group does not bear these charges as out-of-pocket expenses since many in this group have indemnity coverage with commercial carriers of health insurance. Thus, for those few individuals who actually bear the full burden of their own hospital bills, the sicker they are, the more they will need to pay. Whether this type of equity is desirable or obsolete is a subject that should be re-opened to debate.

Furthermore, when physician services are involved, the use of charges per unit of service as a basis for reimbursement implies the existence of usual and customary fee levels which are independent of those established by the contractual reimbursement

arrangements established or approved by the Rate Setting Commission. As the proportion of the case-load covered by these contractual arrangements rises, however, how is it possible to distinguish the "usual" and "customary" charge from that "established" by third-party providers and "approved" by the Rate Setting Commission.

Finally, just as the choice of the unit of service to use in establishing price may be affected by the nature and extent of the insurance coverage that prevails in the population at risk, so too the selection depends upon decisions previously reached which define the dollars to use in establishing price. In general, as has been suggested previously, the more specific the item of service, the more difficult it will be to predict its cost accurately.

In part, this follows from the fact that many services may be produced by a single individual or a single department, as when a single laboratory technician in the laboratory performs many different types of biochemical analyses. Under these conditions, there is a problem of joint costs that must be allocated among different services. Such allocations require accounting conventions which allocate joint overhead and other expenses which cannot be unequivocally attributed to each item of service. Such joint costs will also include the expenses incurred while personnel and equipment are in stand-by readiness or otherwise operating at less than their full capacity.

In part, also, however, it is more difficult to predict the cost of particular items of service because it is more difficult to predict volumes of service that will be rendered in any specific

time period than it is to forecast the expenditures of the institution during that period. This reflects the fact that the payroll of any institution, which accounts for about two-thirds of its expenditures, tends to remain relatively insensitive to changes in the demand for service and quantity of care that is delivered. (See Ingbar and Taylor, 1968.) As a consequence, the derived statistic cost-per-unit-of-service tends to fluctuate continually with shifts in demand.

Thus, if price is to be per unit of a la carte type of service, stability of price over time can only be introduced by utilizing instead of cost a charge structure, albeit one in which charges would have been based upon assumptions concerning anticipated mixes and volumes of service at the break-even point. Once the charge per item of service is thus established, however, as previously suggested, aggregate earned charges may be kept in line with total expenditures by manipulating expenditures rather than by changing the prices charged per units of service.

Certainly, if earned charges exceed costs, it would appear more desirable from the institution's point of view to increase expenditures rather than to lower charges, especially since the latter policy would leave the institution vulnerable to inadequate revenue were the volume of service again to return to the level utilized in estimating the break-even point of the initial charge structure. Furthermore, increasing expenditures also appears to challenge the institution to provide more diverse and perhaps better care. In fact, of course, the issue is not that simple. Increasing expenditures need not be associated with any change in the "output" of care and services; it might, for example, in a period of labor shortage merely reflect a rise in the levels

of wages and salaries. Such an increase in wage rates and salary scales might improve the ability of the institution to retain its personnel in competitive labor markets and thus to lower turn-over rates of those already employed. In addition, new personnel might be more readily attracted.

In short, although the two problems are conceptually different, from a practical point of view in establishing a price, the selection of the real unit of service to price cannot be divorced from the specification of dollar values to use in its determination, be these past expenditures, budgeted future expenditures or estimated charges. Furthermore, the time period relevant to the analysis determines magnitudes of both services and dollars. Thus, the issue of predictability is intimately entwined with these problems.

LIMITS ON REIMBURSEMENT: INSTITUTION'S OWN PAST PERFORMANCE, OTHER INSTITUTIONS' COMPARATIVE PERFORMANCE, OR GROUP EXPERIENCE

Regardless of what particular unit of service is selected as the determinant of price, and whether rates are based upon past or anticipated expenditures, ultimately a question arises as to whether there are to be any limits placed upon the rates that will be paid to an individual institution.

Institution's Own Past Performance

Thus, for example, the Rate Setting Commission has currently established a limit of 125 percent over the 1968 audited per diem upon the all-inclusive rate for publicly-aided patients for each day of hospitalization. No such limit is placed upon the rate for industrial accident cases.

Another sort of limit is frequently used in establishing certain of the rates for new institutions and for nursing and convalescent homes. This limit applies only to the numerator of the per diem rate, as when 85 percent of available bed days will be used whenever

this figure exceeds actual patient days. Thus, limits may be established which relate the present reimbursement rate to the experience of the particular institution in prior accounting periods or relate the current rate to the capacity of the institution to render service. Other sorts of criteria could be used.

Other Institution's Comparative Performance

Similarly, a growing body of literature has demonstrated that hospital costs, and those of other institutions in the health field, can be compared if more sophisticated statistical techniques are employed. These procedures range from the visual techniques of scatter-diagrammed-frequency-distributions to histograms. In addition, there are the statistical techniques which range from medians and means to simple correlation or multiple regression and factor analyses. (See bibliography of Ingbar and Taylor, 1968, and listing of more recent studies included in bibliography of Davis, 1969.) Although considerable debate remains over the factors responsible for differences in costs, which no doubt will continue as more is learned, there is no longer any question but that inter-hospital cost comparisons can yield interesting and useful information. Furthermore, as the value of the statistical techniques is proved, emphasis can shift to defining and collecting better data for such analyses.

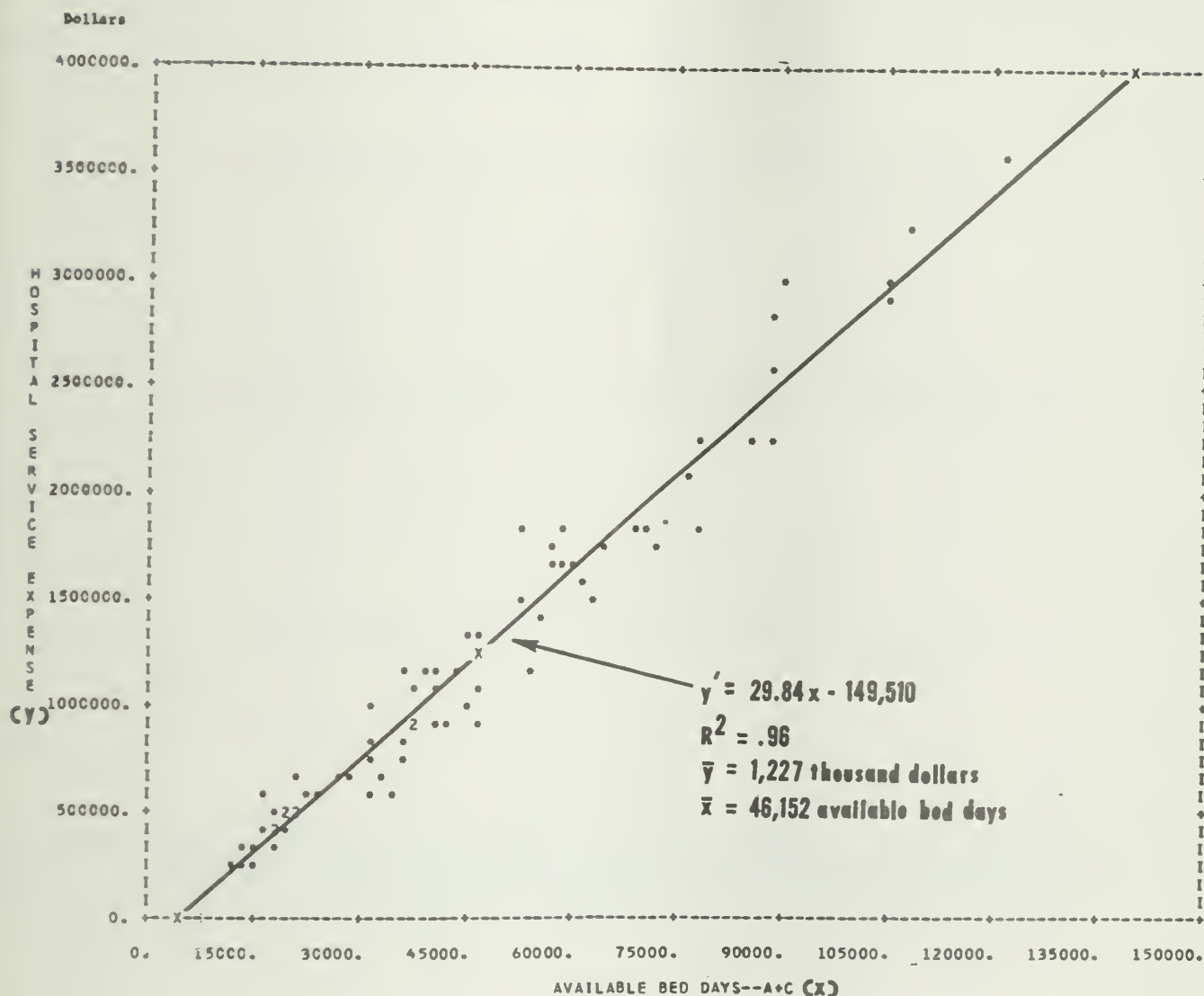
From the point of view of reimbursement rates, the results to date are significant in that they begin to provide objective data that can be used to establish limits on the costs and rates that will be considered acceptable among institutions. The figures which follow illustrate the types of diagrams that might be used for this purpose.

Figure 2, Figure 3, Figure 4, Figure 5, Figure 6, Figure 7

Relationship between hospital service expense(y) and available bed days(x) for 72 Massachusetts Community Hospitals in 1959

Direct Departmental Expense and Capacity Output for Each Community Hospital Reporting to the Massachusetts Bureau of Hospital Costs and Finances

Key: * = Data for one hospital
2,3,4...9 = Numbers of hospitals with data of specified magnitude
— = The regression line calculated by the method of least squares. This line is defined by the three "X" points, the middle one of which represents the mean of the y and x variables (\bar{y} and \bar{x}).



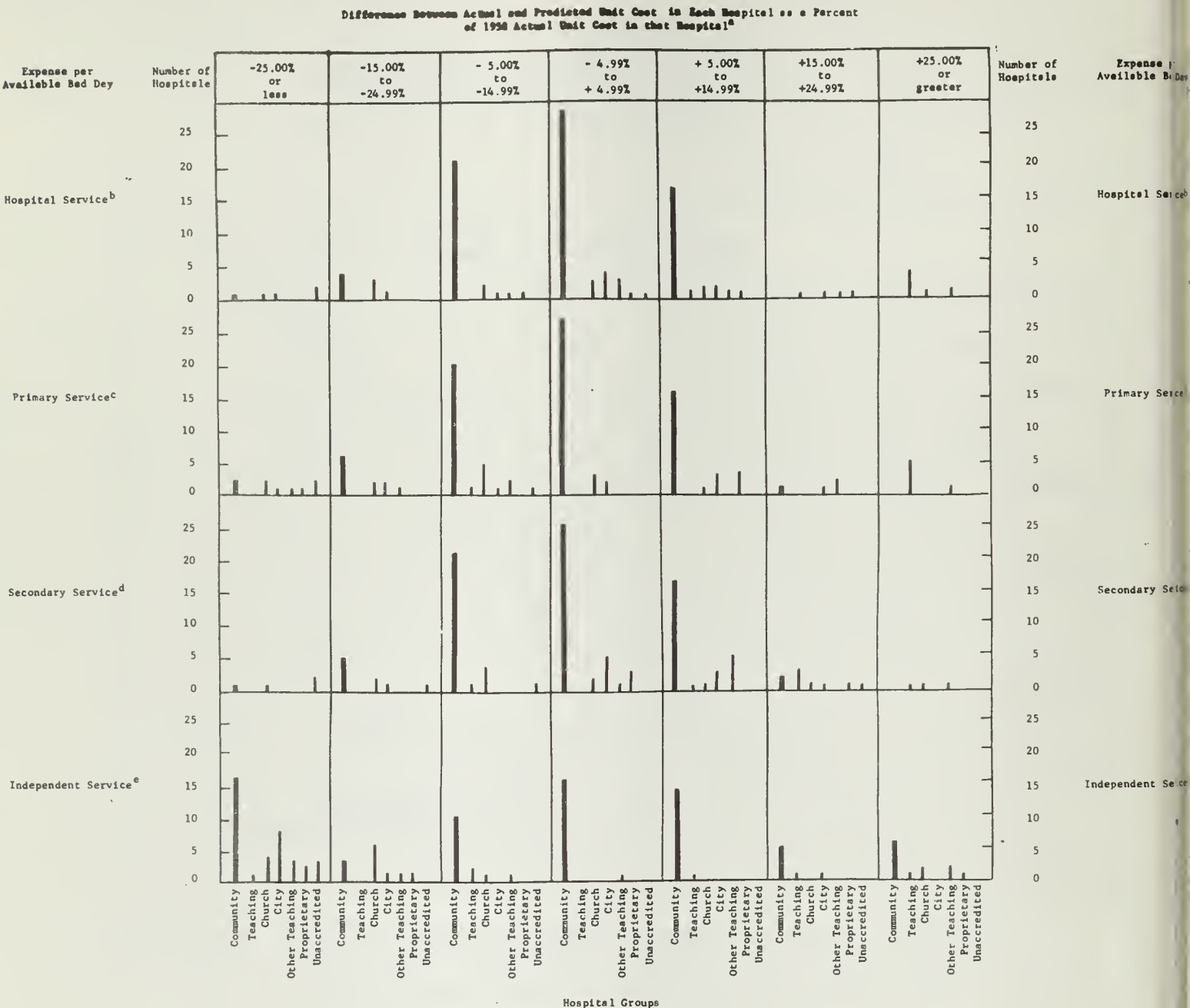
*For all hospitals, the relationship between expense (y) and size (x) is depicted by this regression line. This line is calculated ($Bx + a$) from the statistics for each hospital by the method of least squares. The slope coefficient (B) of this line estimates the marginal expense--the expense of adding one unit of size. The constant term (a) represents the expense of nursing service which is fixed regardless of size and is the intercept of the regression line with the total expense (y) axis for zero size.

Values for any point on this line represent a particular number of beds (x) and the associated average estimated total expenses of nursing service (y'). How well the regression line fits actual information is measured by a "multiple determination coefficient" (R^2) which is defined as the percentage of the variance of the dependent variable (y) that can be explained by the variance of the independent variable (x). An R^2 of 1 indicates 100 percent explanation of the variance in the dependent variable (y). The variance, in turn, is a measure of the scatter of all the reported values of a variable around their mean value. The variance is formally defined in three steps. The first step finds and squares the difference between an individual value of a variable and the mean value. The second step sums these squared differences from all hospitals included in the computation. The final step divides this sum by the number of values of the variable that were included.

Source: Ingbar, Mary Lee, Barbara J. Whitney, and Lester D. Taylor. "Differences in the Costs of Nursing Service: A Statistical Study of Community Hospitals in Massachusetts," American Journal of Public Health, 56:10:1699-1715 (October 1966), Preliminary Figure 1.

Figure 3

Differences between actual and predicted unit cost by hospital group for voluntary acute hospitals in Massachusetts in 1958: Average expense per available bed day for hospital, primary, secondary and independent services



^aThe regression equations used for predicting unit costs were estimated from data for the 72 community hospitals in 1958 and 1959 treated as 144 reporting units. 1958 data for the explanatory factors were then used to predict costs for each hospital.

^bThe regression equation from which these residuals were calculated utilizes six explanatory factors which are defined in Table 10 as: x_{55} , x_{74} , x_{77} , x_{86} , x_{88} , x_{90} . This equation is stated in full as Equation 10, Table N-01, and as Equation 9, Table 13.

^cThe regression equation from which these residuals were calculated utilizes six explanatory factors which are defined in Table 10 as: x_{55} , x_{63} , x_{74} , x_{77} , x_{88} , x_{93} . This equation is stated in full as Equation 9, Table N-06, and as Equation 5, Table 11.

^dThe regression equation from which these residuals were calculated utilizes six explanatory factors which are defined in Table 10 as: x_{55} , x_{63} , x_{66} , x_{74} , x_{77} , x_{88} . This equation is stated in full as Equation 9, Table N-08, and as Equation 9, Table 11.

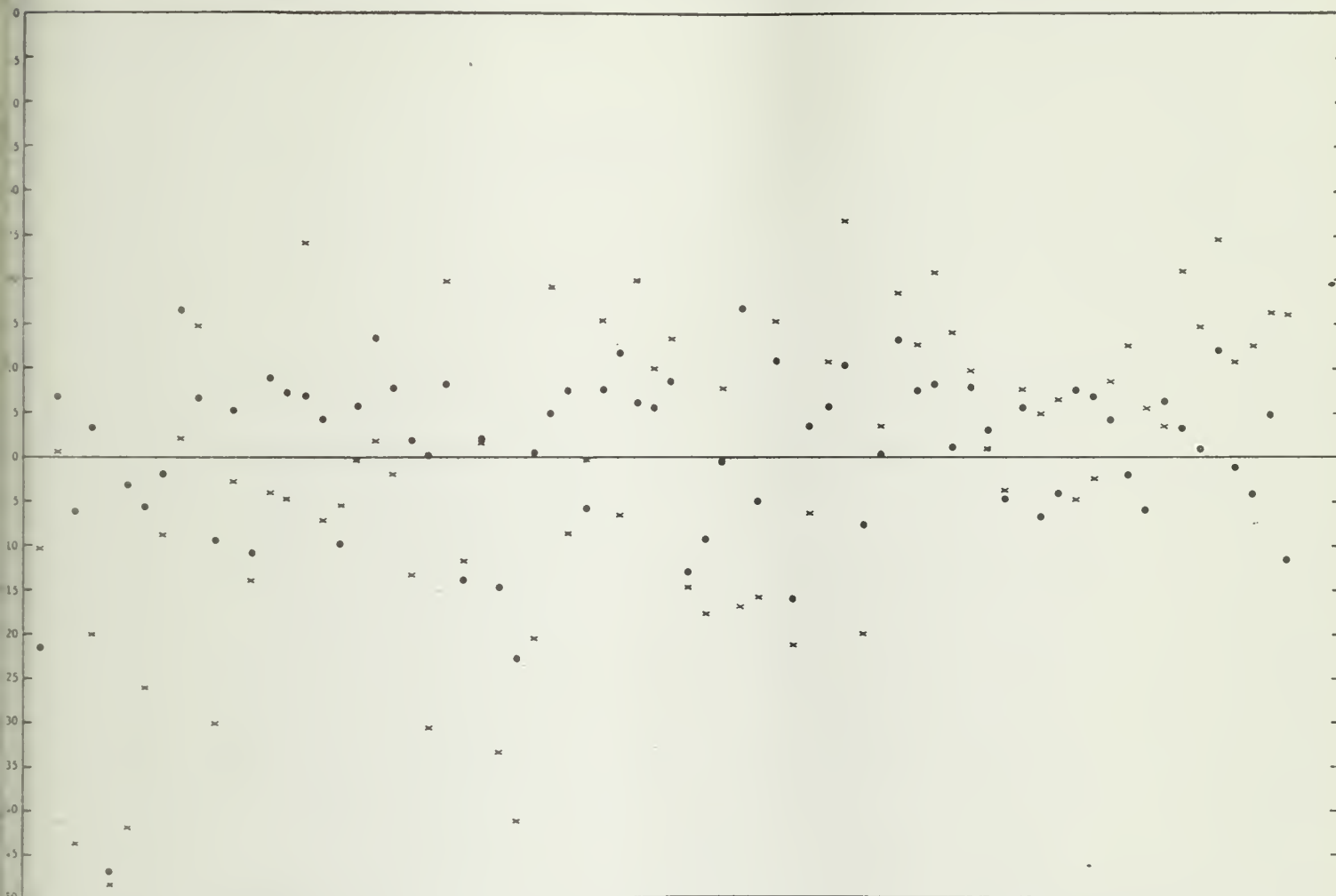
^eThe regression equation from which these residuals were calculated utilizes five explanatory items which are defined in Table 10 as: x_{62} , x_{65} , x_{86} , x_{88} , x_{90} . This equation is stated in full as Equation 11, Table N-10, and as Equation 11, Table 11.

Source: Ingbar, Mary Lee, and Lester D. Taylor. Hospital Costs in Massachusetts: An Econometric Study. Cambridge: Harvard University Press, 1968, Preliminary Table NR-4 and Figure 5.1, p. 86.

Figure 4

Differences between actual and predicted unit cost by hospital for 72 Community Hospitals in Massachusetts in 1959: A comparison of two methods of predicting average expense per available bed day for hospital services*

- * Residuals were calculated from actual unit expenses of the 72 community hospitals in 1959 and a single predicted unit cost equal to the mean expense for the 72 community hospitals in 1958 and 1959 treated as 144 reporting units.
- * The regression equation from which these residuals were calculated utilizes four explanatory factors which are defined in Table 10 as: x_{55} , x_{74} , x_{77} , x_{88} . This equation is stated in full as Equation 2, Table M-01 and as Equation 1, Table 13.

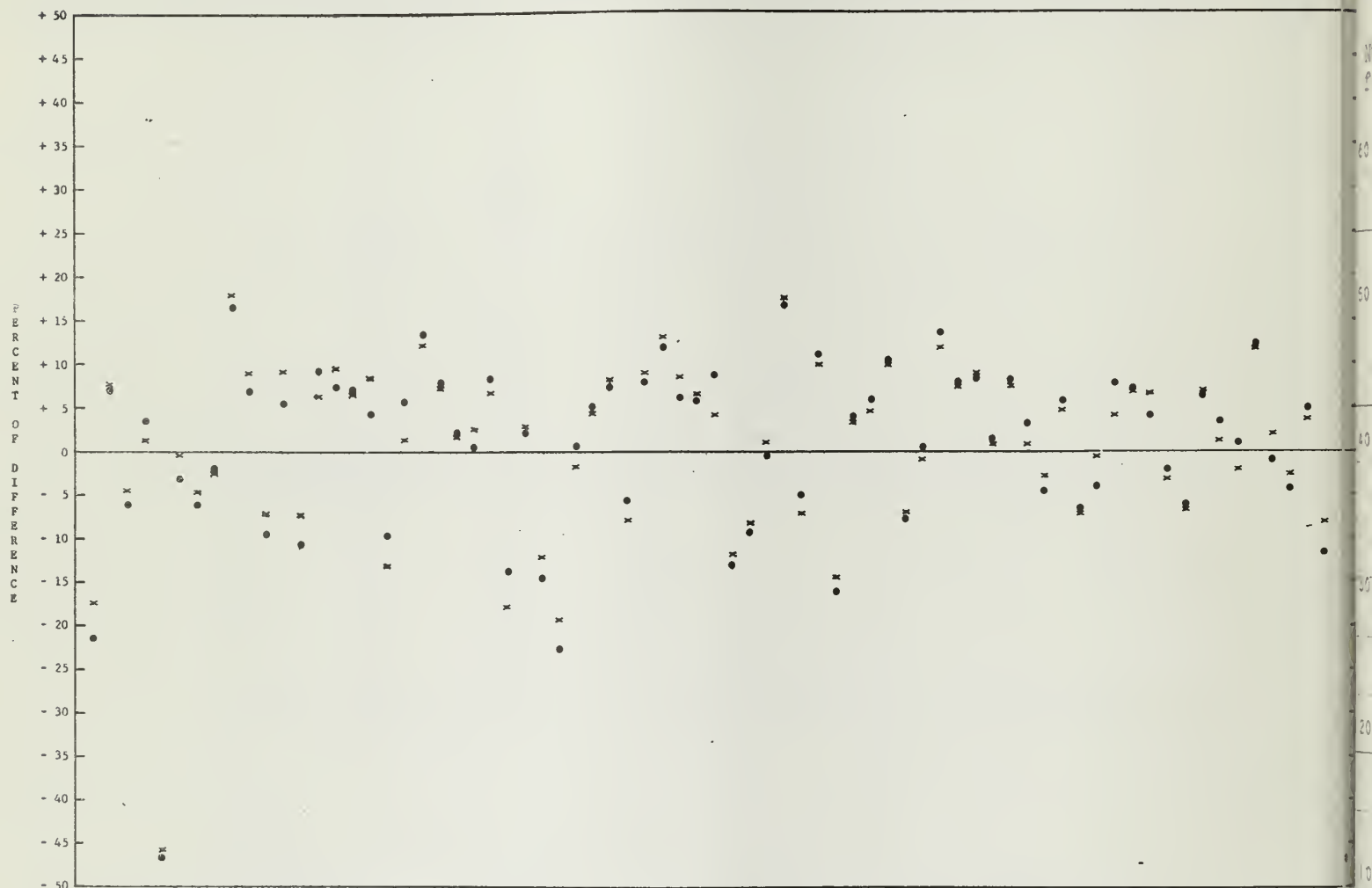


The regression equations used for predicting unit costs were estimated from data for the 72 community hospitals in 1958 and 1959 treated as 144 reporting units. 1959 data for the explanatory factors were then used to predict costs for each hospital. The residual, that is, the difference between actual and predicted unit cost in each hospital, was calculated as a percent of the 1959 actual unit cost in that hospital. In graphing these percent differences, hospitals were ranked by size along the horizontal axis.

Source: Ingbar, Mary Lee, and Lester D. Taylor. Hospital Costs in Massachusetts: An Econometric Study. Cambridge: Harvard University Press, 1968, Preliminary Table NR-2.

Differences between actual and predicted unit cost by hospital for 72 Community Hospitals in Massachusetts in 1959: A comparison of two methods of predicting average expense per available bed day for hospital services*

- Key: • = The regression equation from which these residuals were calculated utilizes four explanatory factors which are defined in Table 10 as: $x_{39}, x_{74}, x_{77}, x_{88}$. This equation is stated in full as Equation 2, Table N-01 and as Equation 1, Table 13.
- x = The regression equation from which these residuals were calculated utilizes six explanatory factors which are defined in Table 10 as: $x_{35}, x_{74}, x_{77}, x_{86}, x_{88}, x_{90}$. This equation is stated in full as Equation 10, Table N-01, and as Equation 9, Table 13.



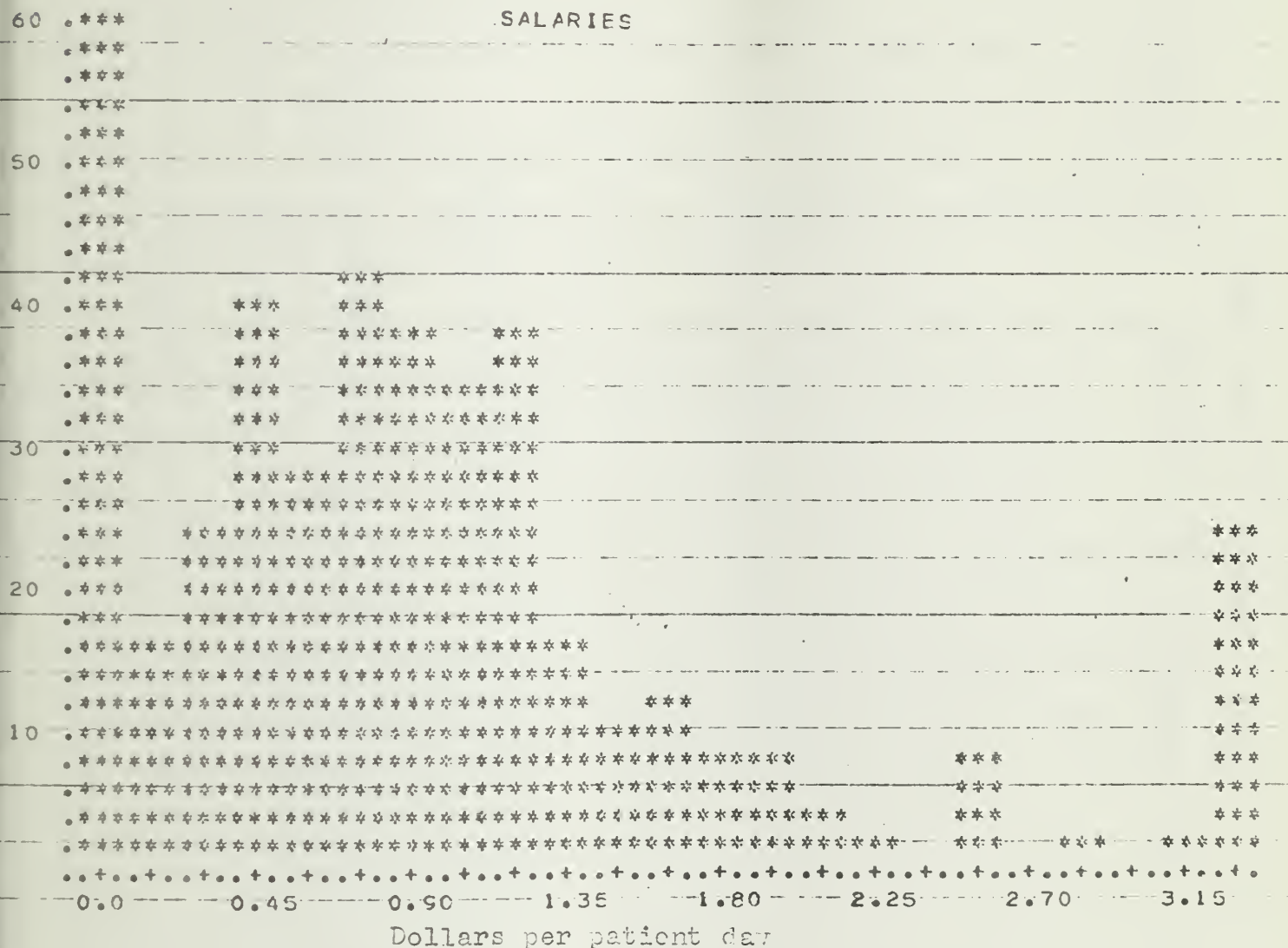
*The regression equations used for predicting unit costs were estimated from data for the 72 community hospitals in 1958 and 1959 treated as 144 reporting units. 1959 data for explanatory factors were then used to predict costs for each hospital. The residual, that is, the difference between actual and predicted unit cost in each hospital, was calculated as a percent of the 1959 actual unit cost in that hospital. In graphing these percent differences, hospitals were ranked by size along the horizontal axis.

Source: Ingbar, Mary Lee, and Lester D. Taylor. Hospital Costs in Massachusetts: An Econometric Study. Cambridge: Harvard University Press, 1968, Preliminary Table NR-3.

Figure 6

Histogram of salaries per patient day incurred by
nursing homes in Massachusetts in 1968

Number of
facilities



MEAN= 1.01

S.D.= 1.33

Source: Systemation, Inc. An Evaluation of Nursing Home Expenses in Massachusetts During 1968: A Report prepared for the Department of Public Health of the Commonwealth of Massachusetts at the Request of David R. Kinloch, M.D., D.P.H., Director of the Division of Medical Care. Boston, December 23, 1969.

Figure 7

MEROPS: Example of graph output

IPR08 = 54321
DIVISION 1958
GROUP

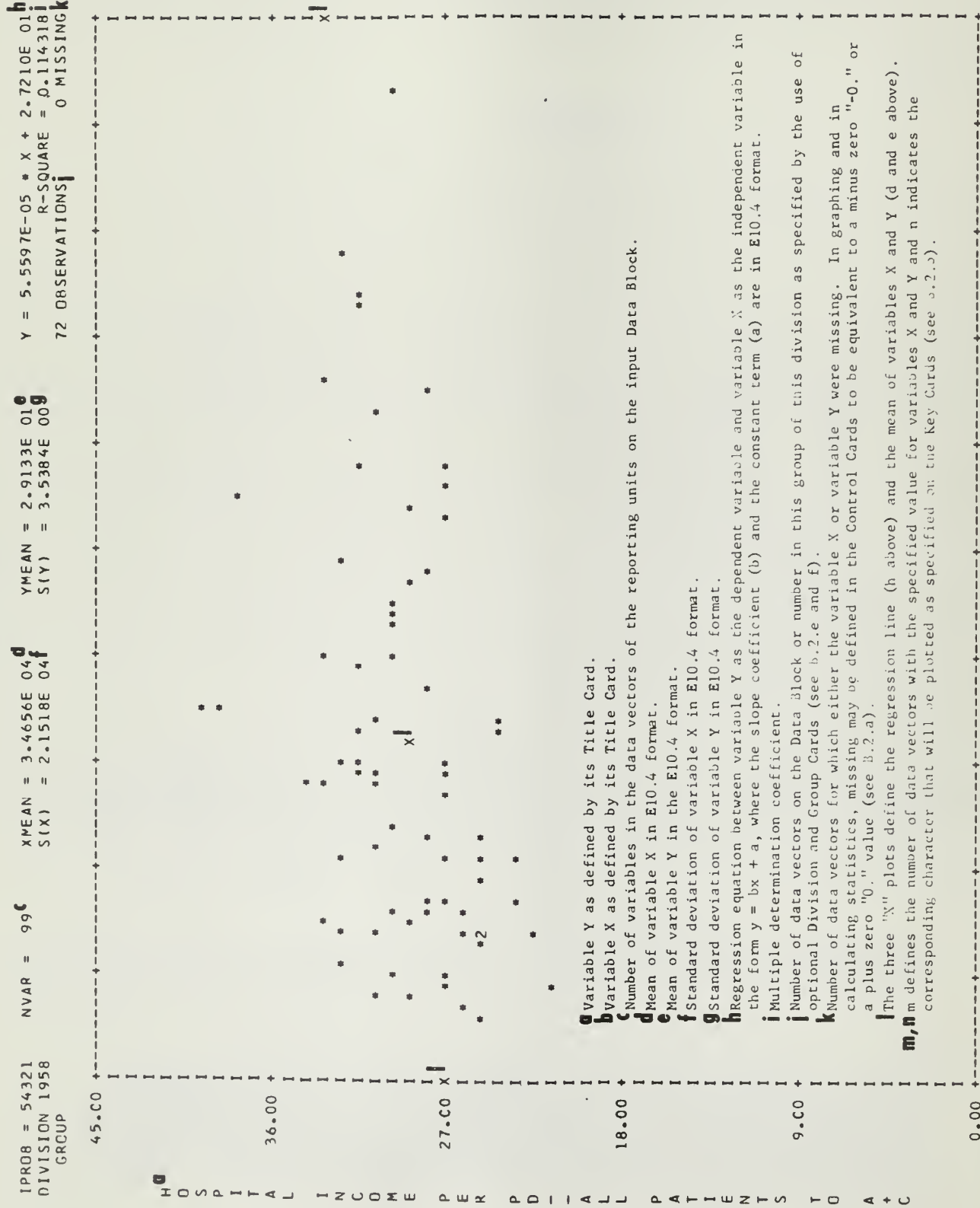
NVAR = 99^c

XMEAN = 3.4656E 04^d
S(X) = 2.1518E 04^f

YMEAN = 2.9133E 01^g
S(Y) = 3.5384E 00^g

Y = 5.5597E-05 * X + 2.7210E 01^h
R-SQUARE = 0.114318ⁱ
72 OBSERVATIONS^j 0 MISSING^k

KEY
m = 1
n = 2
REGR = x^l



Group Experience

Finally, of course, rates of payment to every institution may be made a function of the experience of the group. The fundamental argument in favor of establishing rates on the basis of group experience is, of course, obvious. It involves the basic notion that payments to each institution should reflect some sort of standards of "reasonableness" which are determined externally to the particular institution on the basis of clearly defined objective information that is measurable, reportable, and susceptible to statistical summarization.¹

If such external yardsticks can be identified and measured, it becomes possible to introduce the corollary notions that "efficiency" is to be rewarded and "inefficiency" penalized. Thus, the experience of the group can become the basis for establishing limits on the level or rate of change in reimbursement rates. These, in turn, determine whether a particular institution is to be rewarded or penalized. Institutions that are providing service with more efficiency or effectiveness than the average, can then be allowed to retain a portion of the savings. By thus

¹ New York State, for example, in its rules and regulations as originally promulgated on September 18, 1970, stated that: "Reimbursement for costs of services in a health facility which are not efficiently provided shall be reduced to those levels of payments which could reasonably be anticipated if such services had been provided by the operation of joint central services with other hospitals or use of facilities or services which could have served as effective alternatives or substitutes for the whole or any part of such hospital service."

rewarding desirable performance, such institutions would then be in a better position to expand, whereas those whose costs were above the average would -- if they were paid on the basis of average experience -- be forced either to improve their efficiency, find other sources of financing or leave the industry. Thus, as in deciding what unit of service to price, limits cannot be established without considering the effect of reimbursement policies on the quality of the product and on the entry and exit of firms from the industry, that is upon the supply of resources and services.

Possible criteria by which hospitals might be grouped are illustrated in the excerpts from the rules and regulations of New York State which follow.

"86.13 Groupings. (a) For the purpose of establishing ceilings, medical facilities will be grouped as follows:

"(1) Type of medical facility:

- (i) hospitals part of teaching centers;
- (ii) hospitals affiliated with teaching centers or maintaining a substantial program of graduate education
- (iii) general hospitals;
- (iv) special hospitals by type;
- (v) nursing homes, grouped by average length of stay;
- (vii) independent out-of-hospital health facilities.

"(2) Geographic areas:

- (i) Western New York Hospital Service Region;
- (ii) Rochester Hospital Service Region;
- (iii) Central New York Hospital Service Region;
- (iv) Northeastern New York Hospital Service Region;
- (v) Long Island Hospital Service Region;
- (vi) Northern Metropolitan Hospital Service Region;
- (vii) New York City Hospital Service Region.

"(3) Size of medical facility:

(i) For hospitals:

- (a) under 100 beds;
- (b) 100-199 beds;
- (c) 200-299 beds;
- (d) 300-499 beds;
- (e) over 500 beds;

(ii) For nursing homes:

- (a) under 50 beds;
- (b) 50-99 beds;
- (c) 100-149 beds;
- (d) 150-199 beds;
- (e) 200-299 beds;
- (f) 300 and over.

"(4) Sponsor

- (i) voluntary hospitals;
- (ii) public hospitals;
- (iii) proprietary hospitals
- (iv) voluntary nursing homes;
- (v) public nursing homes;
- (vi) proprietary nursing homes.

"(b) For health related facilities which are affiliated with nursing homes, the maximum rate which may be established may be no more than 60 percent of the rate established for the affiliated nursing home. For health related facilities which are not affiliated with another certified facility, the maximum rate may not exceed 60 percent of the weighted average reimbursement rate for the nursing homes of similar size in the same geographic area.

"(c) Where one group contains an insufficient number of medical facilities needed to establish a reimbursable ceiling, such institutions will be considered as part of another comparable group or combined with comparable medical facilities without regard to geographic areas or size.

"86.14 Ceilings on payments. (a) Effective January 1, 1970, ceilings for comparable groups of medical facilities will be established for the computation of reimbursement for service to inpatients. The ceilings will be considered prior to the addition of a factor to bring costs to projected expenditure levels during the effective period of the reimbursement rate.

"(b) In computing the rate for inpatient routine services for hospitals for the rate period beginning January 1, 1970, no amount shall be included that is in excess of 10 percent over the weighted average cost of routine inpatient services of all hospitals in the group."¹

Further evidence concerning the criteria to use in grouping hospitals is to be found in the study of Ingbar and Taylor (1968¹) of Hospital Costs on Massachusetts. Findings from this study indicated that only the teaching hospitals appear clearly to belong to a different universe of institutions, that is, only the teaching hospitals appear to have cost structures that clearly differ in major characteristics from those associated with community hospitals. In discussing these findings, Ingbar and Taylor state:

"Looking at the hospitals by type, it is not surprising that the teaching hospitals have higher costs per ABD² than would be predicted from the regression equations. Since they specialize in medical education as well as the provision of extensive medical care, the diseases they treat are likely to be the more unusual and serious, and therefore more expensive. Moreover, even if the direct expenditures on research and medical education are excluded, as they should be whenever grant or university funds are used, indirect costs will occur. These costs are particularly evident in the primary services....

"The lower than predicted costs per ABD for the church hospitals are undoubtedly due to lower personnel costs, reflecting their particular labor supply and the problems of imputing wages to members of religious orders. This is especially evident in their lower costs for nursing care and for the dietary, housekeeping, and laundry and linen departments... The lower costs for those departments, however, are offset somewhat by higher costs for the administration and general and radiology departments....

"As might have been expected, the costs per ABD of the three unaccredited hospitals are at least 25 percent below what

¹New York State, Department of Health. "Part 86 of the Administrative Rules and Regulations contained in Subchapter K, Chapter II, Title 10 (Health), of the Official Compilation of Codes, Rules and Regulations of the State of New York: Reporting and Rate Certification for Medical Facilities based upon statutory authority of paragraphs 2805 and 2807 of the Public Health Law." (MS). Albany, November 17, 1969.

²Available bed day

would be predicted by the regression equation. By definition, unaccredited hospitals provide a less comprehensive form of medical care, and thus their service is probably of a simpler nature. Hence their costs should be lower.

"The municipal hospitals seem to be least efficient in primary services--particularly nursing, laboratory, and radiology--and most efficient in the independent services, the latter perhaps reflecting inelegant facilities or inadequate accounting methods. They are also relatively effective in holding down the costs per ABD of the administration and general department, perhaps because of an interchange with regular city payrolls. The proprietary hospitals have substantially higher than predicted laboratory costs per ABD, and several also have high administration and general and pharmacy costs... It seems surprising, however, that their administration costs are higher than predicted.

"The major conclusion to be drawn from the analysis of other hospitals is that, although it was probably correct to exclude them from the pilot sample, the heterogeneity of the cost structure of Massachusetts hospitals should not be overemphasized. While the teaching, church, and unaccredited hospitals can be identified by where their costs per ABD lie in relation to the regression plane fitted to the data of the 72 community hospitals, only the teaching hospitals appear clearly to belong to a different universe. Thus, any future study of the cost structure of Massachusetts hospitals could probably use a larger sample."¹

In short among the specific factors that might be taken into consideration in grouping hospitals are those descriptive of:

- 1) Differences in the diagnostic categories of patients and of the severity of illnesses within each category.
- 2) Differences in teaching and educational functions as evident in formal agreements with medical schools, numbers of interns and residents and the range of their specialization; presence of schools of nursing and the number of student nurses and their level of training.

¹. Ingbar, Mary Lee, and Lester D. Taylor. Hospital Costs in Massachusetts: An Econometric Study. Cambridge: Harvard University Press, 1968, pp.89-91.

- 3) Differences in the specialized equipment and expertise available on a routine or stand-by basis to meet essential community medical needs.
- 4) Differences in medical practices, services and specialties offered as a part of hospital care including those offered by the house staff of the institution without additional charge.
- 5) Differences in wage and salary levels as a result of geographic location.
- 6) Considerations relating the comparative productivity of resources and the efficiency with which services are organized to meet legitimate medical needs and demands.

In addition, the effect of size of the institution upon the cost of providing specific services must be further investigated since it would appear that size alone is probably insufficient as a basis for grouping hospitals (see Ingbar and Taylor, 1968, and Reimbursement Incentives, 1968). Similarly, as previously indicated ownership characteristics as traditionally defined are probably not associated with significant differences in costs among institutions, except for the teaching hospitals.

The fundamental argument in favor of grouping hospitals is, of course, obvious. It involves the basic notion that payments to each institution should reflect some sort of standards of "reasonableness" which are determined externally to the particular institution on the basis of clearly defined objective information that is measureable, reportable, and susceptible to statistical summarization. Unless such external yardsticks can be identified and calculated, however, it becomes impossible to introduce the corollary notions that "efficiency" is to be rewarded and "inefficiency" penalized, no matter how much these principles may be desirable in theory.

DEFINITIONS OF CHANGES OVER TIME:
ABSOLUTE VALUES OR RATES OF CHANGE IN DOLLAR
OR PERCENTAGE TERMS

The above discussion illustrates the fact that whichever type of limit is chosen, a variety of technical problems must also be resolved. In defining changes in data over time or differences in such statistical data among institutions, it is necessary to decide whether these discrepancies should be measured in terms of absolute dollar amounts or in percentage terms. Similarly, should limitations be placed upon the rate itself or upon its difference over time or among institutions. Which types of procedures are employed influence the relative advantage of large versus small institutions, new versus old, fast growing versus stable, etc. As discussed by Saul Waldman in the Social Security Administration's publication Reimbursement Incentives (1968) technical issues become even more complex when groups of hospitals are involved.

"Average Increase Versus Average Cost

"A question may be raised at this point as to why the average increase in costs, rather than the average dollar cost itself, is used as the basis for the plan, since the latter would represent a more direct approach to reimbursing on the basis of an average. Substantial difficulties are encountered in attempting to group "similar" hospitals and determine their average cost. As yet, attempts to explain the large variations in cost among apparently similar hospitals in terms of the more obvious factors- such as the type of services and facilities, diagnostic composition of the patient load, and existence of teaching and research programs - have not appeared to be successful enough to permit implementation of such an average-cost formula.¹

"Under the increase-in-cost plan, the grouping of the hospitals is not as crucial as under an average-cost formula (although as discussed later, it does represent an important element of the plan). In effect, the initial cost variations of the hospitals in the group are accepted as "real", but the assumption is that the increases in normal cost for each hospital should be approximately the same because

¹ Some interesting work is being done in this area, most notably Mark Berke's "point rating" study of San Francisco hospitals."

similar factors are operating to increase their costs. Among these factors, for example, are wage raises for hospital employees, increases in the number of hospital personnel per patient, rising costs of supplies and equipment, and additional costs associated with advances in medical knowledge and technology.¹

Such technical mathematical considerations become even more important when hospitals are to be grouped. In deciding upon the criteria to use in grouping hospitals, the selection depends in part upon whether institutions within each group should exhibit similar levels of costs and reimbursement rates.

Alternatively, methods may stress the importance of institutions being affected by similar rates of change or "cost-increase" trends. The mathematics of this must be intimately related to the criteria of grouping the hospitals as suggested below.

"Criteria for Grouping Hospitals

"As suggested above, a grouping of hospitals would be needed, not to obtain groups with similar dollar costs, but, rather, groups that are affected by similar cost-increase trends. Because special factors may influence cost increases in different localities, one criterion for grouping might be geographical area—a metropolitan area or a rural county, for example. Another criterion might be the general type and range of services provided, in order to reflect differences in the rate of increase in the cost of various types of services; hospitals could be grouped according to whether they were short-or long-term stay, general-or special-service, and teaching or nonteaching hospitals. On the other hand, it seems unnecessary to group on the basis of type of control (governmental, voluntary, or proprietary)."²

¹U.S. Department of Health, Education, and Welfare, Social Security Administration, Office of Research and Statistics. Reimbursement Incentives for Hospital and Medical Care: Objectives and Alternatives. Washington, D.C.: U.S. Government Printing Office, Social Security Administration, Office of Research and Statistics, Research Report No. 26, 1968, pp.40-41.

²Ibid, p. 42.

AGGREGATION PROCEDURES AND MEASURES OF CENTRAL
TENDENCIES AND TRENDS: MEANS VERSUS
MEDIAN AND OTHER QUESTIONS RELATING
TO STATISTICAL PROCEDURES

Similarly, if data from different accounting periods are to be combined, regardless of how the accounting periods are ultimately defined, decisions must be reached concerning the statistical procedures to employ in averaging and aggregating data. Is a mean or a median to be used when an average is to be computed? Is there to be a weighting of costs or charges by patient days or some other measure of services when data are aggregated and averaged?

The language of the regulations in New York State, for example, defines time periods and statistical procedures to employ in adjusting costs to reflect anticipated trends of the forthcoming accounting period as follows:

"86.15 Adjustments to basic computed rate. (a) Payment rates will be established on a prospective basis.

"(b) To the allowable basic rate, computed in accordance with ceiling limitations, there will be added a factor to project allowable cost increases during the effective period of the reimbursement rate.

"(c) The factor to be added to the allowable basic rate for hospital care for the rate period from January 1, 1970 to June 30, 1970 will be determined as follows:

"(1) The average rate of increase of each facility will be computed by comparing the average per diem cost for the years 1965, 1966, and 1967 to the average per diem cost for the years 1966, 1967, and 1968.

"(2) The allowable basic rate for inpatient care will be increased by:

- "(i) the lesser of (a) 75 percent of the average rate of increase computed in (1) above or (b) the average rate of increase of all facilities in the group weighted by patient days, plus
- "(ii) 75 percent of the percentage allowable in (i) above applied to the result of the above computation to project the average annual rate of increase to the effective period of the rate.

"(3) The allowable basic rate for outpatient care will be increased by:

- "(i) the average rate of increase for the facility as computed in (1) above, plus
- "(ii) 75 percent of the average rate of increase applied to the result of the above computation to project the increase to the effective period of the rate.

"(d) The factor to be added to the allowable basic rate for nursing homes and other health facilities for the rate period from January 1, 1970 to June 30, 1970 will be determined as follows:

- "(1) The lesser of (i) 75 percent of the rate of increase in per diem costs, excluding property expenses, between 1967 and 1968 for each facility or (ii) the average rate of increase for all facilities in the group weighted by patient days, plus
- "(2) 75 percent of the percentage computed in (1) above applied to the result of the above computation to project the annual average rate of increase to the effective period of the rate.

"(e) For medical facilities for which adequate data at anticipated utilization are not available to project increases as described above, the factor to be added to the basic rate will be 75 percent of the weighted average percent of increase for the group increased by 75 percent as described above and adjusted to reflect the timeliness of the data available.

" 86.16 Final rates. No retroactive adjustments will be made in rates certified pursuant to the foregoing rules. This does not preclude rate adjustments to correct errors in the determination of such rates.

" 86.17 Revisions in certified rates. (a) The State Commissioner of Health, at his discretion, may consider applications for prospective revisions of certified rates. In general, such applications

will be approved if they result in continuing high quality care and improved operating efficiency with long term cost savings.

"(b) Any request for prospective modification of a certified rate shall be **accompanied** by financial, statistical and program evidence sufficient to demonstrate a change in economic status and an expansion of services, improved quality of care, anticipated improved efficiency or projected long term cost savings."¹

TIME PERIODS

At present, the Rate Setting Commission utilizes only annual data for the year ending September 30 for all hospitals except the municipal institutions for which the accounting period ends December 30, and the state institutions for which the year ends June 30. At least theoretically, however, there is no reasons why these dates should be utilized. For rate making purposes, it might be possible to introduce a system of staggered year-ends which would permit each hospital to be audited within a few months of the filing of its returns. Similarly, were rates to be based upon estimated or budgeted data and were appropriate electronic data processing facilities to be introduced, it might even be possible to introduce quarterly or monthly reporting of at least certain of the more vital information.

It should, however, be pointed out that choice of the time period can influence the level of the rate. In a period of falling prices, it is obviously to the advantage of hospitals to use data for as early a period as possible, since replacement costs will be less than those incurred in past periods. Conversely, when there are rapid rises in wage rates and material prices relating to the labor, equipment and capital used in creating hospital care, hospitals will have difficulty obtaining sufficient cash to replace their own goods and services if reimbursement rates lag at past expenditure levels.

¹ New York State, Department of Health. "Part 86 of the Administrative Rules and Regulations contained in Subchapter K, Chapter II, Title 10 (Health), of the Official Compilation of Codes, Rules and Regulations of the State of New York: Reporting and Rate Certification for Medical Facilities based upon statutory authority of paragraphs 2805 and 2807 of the Public Health Law." (MS). Albany, November 17, 1969.

The importance of time periods, however, is a function not only of the movement of general price levels during the period between the determination of costs and the calculation of reimbursement rates, but equally it depends upon the extent to which hospitals can control their own expenditures. To the extent that the quantity of labor can be controlled independently of its "price", that is the wage rate, a hospital may be capable of altering or determining its total expenditure level independently of the general economic situation, general price changes, or even the demand for its own services. In economic terminology, the issue again involves the question of how "variable" and how "controllable" in the short-run are hospital expenditures?

Thus, regardless of the way in which actual, budgeted and estimated data are to be combined in determining reimbursement rates, time-periods must be defined for both accounting periods and reimbursement purposes. Are data to be reported daily, monthly, quarterly or annually and what are the comparative savings in costs from the administrative point of view in lengthening the accounting period? What years are to be included, past, present and future? How many years are to be utilized?

ADMINISTRATIVE PROCEDURES INCLUDING AUDIT TECHNIQUES AND REVIEW MECHANISMS

Delineation of the administrative procedures that are to be applied before payments are authorized includes in particular the choice between using audited and unaudited data. The audited data have obvious advantages. Their main drawback is the

additional time required for the audit process to be effectuated. The time lag between the generation of the data in the normal course of the operation of the hospital and the reporting of these data to the Rate Setting Commission normally ranges from 3 to 6 months. The audit procedure itself then requires up to an additional year. For a detailed discussion of this problem, see Pureka, 1970.

Among the proposals that have been advanced for reducing this time lag has been adoption of a procedure in which the size of the publicly-aided case-load determines the sequence in which the hospitals are audited, those with the largest publicly-aided case-load being the first to be audited. In Massachusetts, for example, it is estimated that 20 hospitals account for fifty percent of the publicly-aided case-load. These institutions could be audited first.

In addition, statistical analyses of data, ideally also replacing the present practice of desk audits of the accuracy of reports, might be used to screen reports for unusual expenditures and departures from statistical norms.

Reporting Formats

It would also appear that a major revision of reporting formats is long overdue to take advantage of newer technologies of document reproduction and electronic data processing. Thus, for example, the extended fold-out tabular presentation is obsolete since it prevents easy copying of statistical data on the newer copying machines. Equally, much of the detail on these sheets is unnecessary since data could be calculated by electronic data processing equipment from the basic information reported in

the early columns of such forms. Such considerations should be included in the Single Cost Report which is in the process of being developed by representatives of the Rate Setting Commission, Department of Public Welfare, Massachusetts Hospital Association, Blue Cross Association, Inc. and U.S. Department of Health, Education, and Welfare (1970).

Auditors

In order to attract auditors, it would appear that either higher salaries on a closer liaison with training programs is imperative.

Peer Review

Another aspect of the administrative procedure, albeit one that has been unused by the Massachusetts Rate Setting Commission, involves the role of review bodies. Such bodies might, as in the program sponsored by the Connecticut Hospital Research and Education Foundation, include a coordinating council and budget approval boards with actual authority to review specific cost data. This pilot program is being developed and implemented by the research arm of the Connecticut Program Association (Connecticut Hospital Research and Education Foundation) which has contractual agreements with both the U.S. Social Security Administration and Connecticut Blue Cross. Members of the budget approval boards, however, are drawn from the staff of participating hospitals. Alternatively, instead of developing advisory bodies to review budgetary proposals and develop cost standards, it would be possible to utilize advisory groups in the negotiating process in order to assist the Rate Setting Commission in

defining the desirable elements around which the state and the hospitals should bargain. In particular, it would appear that what unit of service should be priced is a critical issue that would benefit from the contribution of advisory opinions.

ALLOCATING COSTS TO REVENUE PRODUCING DEPARTMENTS

Specification of the accounting allocations to be made in distributing departmental costs to revenue producing departments involves the application of the so-called "stepped-down" method. This method and various alternative procedures that might be employed are fully defined in the publications of the American Hospital Association (See, for example, Cost Finding for Hospitals) as well as in instructions accompanying the Hospital Statement for Reimbursement (HCF 400 Report) which is filed with the Rate Setting Commission.

Findings from the study of Hospital Costs in Massachusetts (Ingbar and Taylor, 1968) suggest that the details of such allocation procedures are of minimal consequence, and could be completely computerized as suggested in the previous sections. Indeed, in understanding differences in costs among hospitals, it would appear that major concern should be on direct departmental expenses before the allocation of costs of general services to patient areas and special services. Only then is it possible to determine whether differences in costs associated with such departments as housekeeping, laundry, linen, or plant maintenance bear any association with the size of the institution, its occupancy rate or other possible structural or operational differences among institutions.

LEVEL OF DEPARTMENTAL AGGREGATION

Similarly, it is necessary to decide whether data should be treated departmentally or should be aggregated. Traditionally, room and board expenses are separated from those of the ancillary department, as specified on Schedule V of the Hospital Statement for Reimbursement (HCF 400 Report).

Results from the study of hospital costs by Ingbar and Taylor (1968), however, suggest that this division does not adequately segregate expenditures that are appropriately associated with each day of hospitalization. In particular, the expenses associated with the radiology, laboratory and operating room were found to be closely associated with days of care. This would suggest that it might be useful to reevaluate the question of aggregating departmental data in the light of decisions, as they are reached, on the units to use in pricing services.

In addition, in computing final settlements for publicly-aided cases in previous years, as well as for computing those applicable to Blue Cross and Medicare patients, each hospital may choose to use either data for individual special service departments (the RCC-AC Method) or the single ancillary grouping that results when the data for the various special service departments are aggregated (the Combination Method). Alternatively, an hospital may prefer to use cost and charge data that relate to an all inclusive grouping for all inpatient services, whether routine or special (the All-Inclusive Method). As previously suggested in the detailed discussion of the procedures applied in determining final settlements, by influencing the chances of recovering expenditures, the level of departmental aggregation may markedly influence relative advantages of different sorts of charge policies and departmental spending patterns.

Although such questions are obviously important, it would appear that issues with respect to departmental aggregations and allocations of costs to revenue producing departments need to be reevaluated given, on the one hand, the capability of computers to perform such computations and, on the other hand, the importance of large third-party buyers in the determination of hospital revenue.

DEFINITION OF "ALLOWABLE" EXPENSES

Definitions of allowable expenses are presently based upon specific definition of excluded services rather than upon considerations relating to more general notions of efficiency and economy. Thus, for example, present exclusions in the rules and regulations include such statements as:

"9. The rates determined in accordance with these rules and regulations shall not include reimbursement for: whole blood, services of optometrists, dentists, chiropodists, or special duty nursing services; artificial appliances, eyeglasses, other materials taken home to be used primarily after discharge from the hospital; and radios, television, or other audio-visual devices for which other patients are normally specifically charged." ¹

New York State, in contrast, includes much more elaborate definitions of allowable items in its new rules and regulations of November 1969.

"86.21 Allowable costs. (a) Allowable costs will generally include those costs directly related to patient care including but not limited to salaries, wages, employee fringe benefits, services, supplies, normal maintenance, minor building modification, property expense, interest and applicable taxes. Allowable costs still include a monetary value assigned to services provided by religious orders and for services rendered by an owner and operator of a facility. Allowable costs may not include costs incurred for open heart surgery in facilities not approved by the State Commissioner of Health for this service.

¹The Commonwealth of Massachusetts, Rate Setting Commission. Regulation Number 70-5 effective April 1, 1970: Rules and Regulations under G.L. c.7,ss. 30K-30P, Governing the Determination of Rates of Payment to be used by all Governmental Units for Inpatient Care Provided to Publicly-Aided Patients by Hospitals, Sanatoria and Infirmaries.

"(b) Allowable costs in computing outpatient rates for payments by governmental agencies may include a loss incurred by a medical facility as a result of the failure of a person eligible for the medical assistance program to pay the deductible related to outpatient services.

" 86.22 Recoveries of expense. (a) Operating costs will be reduced by the cost of services and activities which are not properly chargeable to patient care. In the event that the State Commissioner of Health determines that it is not practical to establish the costs of such services and activities, the income derived therefrom may be substituted for costs. Examples of activities and services covered by this provision include:

- (1) drugs and supplies sold for use outside the medical facility
- (2) telephone and telegraph services for which a charge is made;
- (3) discount on purchases;
- (4) living quarters rented to employees;
- (5) employee cafeterias;
- (6) meals provided to special nurses or patient's guests;
- (7) operation of parking facilities for community convenience;
- (8) lease of office and other space of concessionaires providing services not related to medical services;
- (9) tuitions and other payments for educational service, room and board and other services not directly related to medical service.

"86.23 Depreciation. (a) Depreciation based on historical cost is recognized as a proper element of cost.

"(b) For voluntary facilities, depreciation may be computed on either a straight line or accelerated method. Depreciation must be funded and used only for capital expenditures with approval as required or for the amortization of capital indebtedness.

"(c) For public facilities, depreciation is to be computed on a straight line basis. Such depreciation is not required to be funded.

"(d) For proprietary facilities, depreciation is to be computed on a straight line basis on plant and non-movable equipment. Depreciation may be computed on an accelerated basis under a declining balance not to exceed double declining or sum-of-the-years' digits methods on movable equipment.

"86.24 Interest. (a) Necessary interest on both current and capital indebtedness is an allowable cost for all medical facilities.

"(b) To be considered as an allowable cost, interest must be incurred to satisfy a financial need, and at a rate not in excess of what a prudent borrower would have had to pay in the money market at the time the loan was made. Also, the interest must be paid to a lender not related through control, ownership, affiliation or personal relationship to the borrower.

"(c) Interest expense must be reduced by investment income with the exception of income from funded depreciation, qualified pension funds, or in instances where income from gifts or grants is restricted by donors. Interest on funds borrowed from a donor restricted fund or funded depreciation is an allowable expense.

"86.25 Research (a) All research costs shall be excluded from allowable costs in computing reimbursement rates.

"(b) Research includes those studies and projects which have as their purpose the enlargement of general knowledge and understandings, are experimental in nature and hold no prospect of immediate benefit to the hospital or its patients.

"86.26 Educational activities. The costs of educational activities less tuition and supporting grants will be included in the calculation of the basic rate provided such activities are directly related to patient care services.

"86.27 Compensation of owners. (a) Reasonable compensation for owners or relatives of owners for services actually performed and required to be performed will be considered as an allowable cost. The amount to be allowed will be equal to the amount normally required to be paid for the same service provided by a non-related employee, as determined by the State Commissioner of Health.

"(b) Any amount reported as compensation for services rendered by an owner or relative of an owner shall not be allowed in excess of the maximum allowance for full time services in carrying out his primary function.

"86.28 Costs of related organizations. (a) Costs applicable to services, facilities, and supplies furnished to the medical facility by organizations related to the provider by common ownership or control are includable in the computation of the basic rate at the cost to the related organization.

"(b) If the provider has any interest whatsoever in the related organization, the final payment rate will include both the costs of the related organization in providing the services, facilities and supplies and a return on the equity capital of the related organization.

"86.29 Return on investment. (a) In computing the allowable costs of a proprietary medical facility, there will be included

an amount equal to 10 percent of the net equity capital of the institution.

"(b) Equity capital is the net worth of the provider adjusted for those assets and liabilities which are not related to the provision of patient care. Equity capital consists of the provider's investment in plant, property and equipment, net depreciation, and working capital for necessary and proper operation for patient care activities.

"86.30 Temporary rental allowance; proprietary nursing homes. Within the rate of payment for proprietary nursing homes for the period from January 1, 1970 to June 30, 1970 only, an amount may be included as an allowable cost which is equal to the amount included as "imputed rental" in the computation of the rate of payment currently in effect. This amount, if included, is in lieu of depreciation, interest on capital indebtedness and return on investment in real estate and non-movable equipment."¹

It will be noted, even from the more detailed language of the New York State rules and regulations, that particular problems arise with respect to the treatment of "capital" expenditures as distinct from labor costs and other expenses associated with current operations. If depreciation and obsolescence rates are low, the tendency is to minimize the substitution of capital items for labor services since the latter are entirely fundable from current operations. Another alternative to purchasing equipment or improving plant by funding depreciation allowances is to lease these items from commercial or non-profit corporations. Since rental costs are an operating expense, the incentive is frequently to lease equipment even though this may be more expensive over the years than its outright purchase.

¹ New York State, Department of Health. "Part 86 of the Administrative Rules and Regulations contained in Subchapter K, Chapter II, Title 10 (Health), of the Official Compilation of Codes, Rules and Regulations of the State of New York: Reporting and Rate Certification for Medical Facilities based upon statutory authority of paragraphs 2805 and 2807 of the Public Health Law." (MS). Albany, November 17, 1969.

Furthermore, as discussed by Muller (1970), the inclusion of depreciation and obsolescence allowances in the calculation of reimbursable costs indicates that: "Reimbursement may prove to be the most powerful aid to construction and modernization in that it does not require matching funds or a project proposal submitted in competition."¹

Another version of the labor-capital problem involves the problem of extraordinary versus normal costs. Saul Waldman in discussing this problem in Reimbursement Incentives (1968) states:

¹Muller, Charlotte. "Program Elements of Federal Laws on Financing of Health Facilities," American Journal of Public Health, 70:2:315 (February 1970).

"Extraordinary Costs Versus Normal Costs

"Further study is needed to test the reasonableness of the above assumption, but it seems apparent that individual hospitals face, from time to time, large cost increases above and beyond their normal costs. A hospital might, for example, grant a "catch-up" wage increase to its employees during a particular year. Another might engage in a costly program designed to upgrade substantially the scope and quality of its services.

"The plan thus would need to include methods of dealing with extraordinary cost increases. For instance, it would be helpful to compute the percentage increase in cost, for both the individual hospital and the control group, on the basis of a period of years (perhaps 3 to 5 years, using a moving average) rather than on a 1-year basis. A device of this kind would, for example, "average out" the cost increases resulting from catch-up wage increases granted by various hospitals in different years. The use of a moving average seems desirable, apart from extraordinary cost increases, since the normal increases would no doubt vary considerably from year to year.

"For certain large, extraordinary expenses, especially those arising from the upgrading of hospital services, it is doubtful that the use of a moving average would smooth the variation sufficiently. Another method of dealing with these extraordinary costs would be to isolate them and reimburse the hospital for them on a cost basis for the first year they are incurred; for subsequent years, the extraordinary costs would be part of the hospital's base cost. Of course, use of this method would lessen the incentive to control costs by avoiding possibly unnecessary capital expenditures. Also, the determination as to whether certain expenses are extraordinary or normal could be difficult and a subject of considerable dispute among the parties involved. In fact, the determination would probably involve intensive examination of budget and accounting statements, and thus regular budget review might become part of the administration of the formula.

"Several important decisions would need to be made in framing the provisions of a percent-increase incentive plan. These have to do mainly with questions that would arise in grouping the hospitals, computing the cost increases, the effects of the plan on quality of care, and the distribution of gains and losses."¹

¹U.S. Department of Health, Education, and Welfare, Social Security Administration, Office of Research and Statistics. Reimbursement Incentives for Hospital and Medical Care: Objectives and Alternatives. Washington, D.C.: U.S. Government Printing Office, Social Security Administration, Office of Research and Statistics, Research Report No. 26, 1968, pp.41-42.

Among the other items that are frequently subject to debate are those surrounding the rate of return to be accorded institutions of a proprietary nature and the question of whether non-profit operators should be accorded a like allowance which they can then devote to improving or expanding their plant or services. More specifically, there is the question of establishing the fair rates of return on equity capital, both owned and borrowed, and the effect of these rates upon the entry and exit of institutions into the market providing any particular type of health care. As a corollary, there is the question of establishing the value of the equity or net equity to use in determining this rate of return. This raises complex issues concerning methods of determining and relative advantages of using the major types of valuations, that is historical, reproduction, fair market, or latest actual market transaction cost. The use of the latest actual selling price, for example, might open a pandora's box of home trading in the nursing home field. There is also the additional problem of whether the rate of return, however established, should be paid regardless of whether the facility is fully utilized. Thus, for example, the rate of return need not be applied to all beds in an institution, but could be applied only to those actually used during the course of the accounting period. Alternatively, a minimum percentage occupancy or a minimum average patient census could be used in calculating rates of return.

In addition to specifying allowable rates of return on equity capital and the valuations to use in calculating these rates, there is also need to specify the fair rate of reimburse-

ment for ownership and for administration and management functions.

This task is particularly difficult for small nursing homes in which a single individual may perform both of these functions, often in addition to assuming housekeeping and nursing functions. Additional complications are introduced when multiple facilities are owned by a single individual or corporation. Under these conditions, should rates of return reflect fully the savings that may be effectuated by the larger size and more efficient operation of such multiple facilities or should the rates reward these combined facilities by enabling them to retain at least some portion of the economies that they may be able to generate because of their scale as compared to the small single units?

Another often debated question concerns whether certain items are expenses or deductions from income. In particular, the problem arises with respect to so-called "free care" in which patients are billed for services although no one expects them to pay. Is the cost of such services, as measured by what the patient was charged, an expense incurred by the institution or a deduction from its anticipated revenue? The Rate Setting Commission has taken the position that it is a deduction from revenue whereas the Massachusetts Blue Cross, Inc., treats such an item as an expense. From the economic point of view, of course, such items are not costs in the true sense, since the charges attributed to free care are not equivalent to the reduction in expenditures that would have occurred if the patient had not received the free care, that is the so-called marginal cost of the free care.

The free care issue is analogous to that which arises when third parties fail to pay all of the charges that accrue to a particular patient. This, of course, occurs frequently when the per diem system of reimbursement is in effect, as now occurs with industrial accident and publicly-aided patients. Whenever the payments on behalf of such patients as calculated from the approved per diem rate are less than charges, a so-called "contractual write-off" occurs. As in the case of the free care, the question arises as to whether this write-off is an expense of operation or a deduction from revenue.

Definition of acceptable expenditures may be further modified to be made conditional on the existence of related practices or conformity to certain established standards and procedures. Thus, for example, the rules and regulations established by New York State specify that utilization review for both admissions and long stay days shall be a required prerequisite for approval of rate schedules.

"86.2 (f) The State Commissioner of Health may not certify rate schedules for payments by such corporations unless they have submitted to the commissioner and received approval of a plan which:

- "(1) establishes a procedure for monitoring the need for hospital admissions of its subscribers; and
- "(2) establishes a procedure for the re-certification of a subscriber's continued hospital service needs."¹

¹ New York State, Department of Health. "Part 86 of the Administrative Rules and Regulations contained in Subchapter K, Chapter II, Title 10 (Health), of the Official Compilation of Codes, Rules and Regulations of the State of New York: Reporting and Rate Certification for Medical Facilities based upon statutory authority of paragraphs 2805 and 2807 of the Public Health Law " (MS). Albany, November 17, 1969.

Alternatively, the definition of allowable expenditures could be specifically designed to exclude items of service which are considered to involve a strong amenity or luxury component. Private room exclusions are currently a reflection of this philosophy. This concept could be more widely applied and could include such medical services as physiotherapy, which may be prescribed as useful even when not essential medically to the ultimate progress and recovery of the patient. Such refinements in the definition of reimbursable costs would obviously require a careful reevaluation of the medical value of specific services under a variety of diagnostic circumstances. Only thus could rules and regulations be developed which offered a patient the option of using more amenity services by purchasing them, without at the same time threatening the use of these same services in the case of those patients requiring them medically, but lacking the means to buy them.

Exclusions from allowable expenses need not be limited to amenity items. Indeed, as proposed by the Commissioner of Health of the State of New York, hospitals and related facilities can be encouraged "to institute economies and to operate joint central services and less expensive alternative services by excluding from reimbursement the costs of redundant or inappropriately utilized services."¹

Similarly, indiscriminate use of consultants and exorbitant charges for such services can be curbed by instituting prior approval procedures and adopting rules that require evidence of satisfactory completion of projects such as are now being con-

¹New York State Department of Health. "Health Department Policies Related to Hospital Cost Control (Chapter 957 Laws of 1969)." Albany, 1969 .

sidered by the Rate Setting Commission of the Commonwealth of Massachusetts. Only after compliance with such rules and regulations would consultant fees become allowable expenditures for the purposes of calculating reimbursement rates. Even then questions will arise concerning the proper time period over which to distribute such expenses and the extent to which the purpose of the effort should be considered in determining the allowability of the expense. Thus, for example, only those projects directed to improving the efficiency, economy, and effectiveness of the institution's performance might be considered allowable expenses.

REWARDS AND PENALTIES

Implicit in many aspects of the previous discussion has been the possibility of introducing explicit rewards and penalties. These may take the form of a direct monetary penalty for filing a return after a deadline date that has been established or a bonus if a desired action is taken. Alternatively, they may take the form of allowing certain types of expenditures to be included in reimbursable cost only if they comply with previously established conditions, as with the possible requirement for prior approval of consultant fees or capital additions. Such rewards and penalties differ, at least conceptually, from those which relate payment to group performance. The former may apply external standards to the reimbursement process, whereas the latter are conditioned by existing practices within the industry.

Thus, rewards and penalties could be introduced to encourage providers of health care to pursue any desired public good, be this the substitution of outpatient care for inpatient treatment

or the use of paramedical personnel instead of physicians. At least to the extent that more money encourages the provision of more of a specific type of service, it is possible to influence the pattern of medical care by establishing differential rates to providers for the same service. Rates may differ because of differences in who is providing the care and where. Thus, for example, the rate of payment for a given type of surgical operation may be made a function of the specialty training of the physician and the teaching status and size of the hospital within which the patient is hospitalized.

Not only will patterns of medical care be influenced by differential rates of payment to providers, but in addition patterns will reflect differential costs of the service to the user. Thus, the fact that certain types of services will be covered by the subscriber's health insurance policy, only if the patient is hospitalized or in an extended care facility cannot help but influence where and when this person will seek medical care.

In addition to the more subtle questions that influence the provider and consumer which relate to when a service is covered and at what differential rate, bonuses may be directly offered the provider, as when a percentage bonus is given for maintenance of occupancy levels above a specified level. Conversely, it would be possible to include only portions of the expenditures associated with redundant services, were these to be more precisely defined. Thus, unnecessary duplication of radiotherapy equipment, uneconomic units offering kidney dialysis, and other types of specialized services that maybe underutilized or of inefficient size could be penalized directly. Of course, such procedures

cannot be applied in the absence of clearly defined notions of desirable public policy with respect to the efficient and effective provision of health services.

Another form of reward and penalty is the so-called incentive payment. As used in defense contracts, such incentive payments permit the firm to retain a specified portion of any savings that accrue when actual costs are lower than those which were anticipated when the contract was negotiated. Conversely, if actual costs exceed these expected costs, the firm is usually required to bear a portion of this cost. Essentially, this type of incentive payment is analogous to that proposed by the incentive reimbursement plans for hospitals being tested in Connecticut and California. A target budget is established, at least for certain departments, and to the extent the institution can provide these services at less expense, the hospital will be allowed to retain a proportion of the savings it thus engenders.

Regretably, the literature concerning defense contracts suggests that this type of incentive is not a panacea, indeed it may even be a more costly way to do business than the traditional cost-plus arrangement. The problem is that in the absence of both a clearly defined product and a stagnant economic system, the uncertainties with respect to future price levels and production processes and schedules make it difficult to estimate a target budget precisely. As a consequence, this budget must be negotiated with reliance being placed on the know-how of the producer. It is obviously to the advantage of the producer to allow for all contingencies and to keep this target budget (or cost or sale price) as high as possible in order to earn some incentive payments.

However, it appears that despite the existence of such incentive payments, "profits" will not be allowed to be "too high" for fear this will jeopardize future contracts. Thus, the incentive payment never results in dramatically lower costs, but rather insures a level of costs within a limited range of the initial target budget, or negotiated rate, which, as suggested above, may be sufficiently inflated to be less advantageous than a simple cost plus arrangement. For a detailed discussion of some of these problems, see Williamson (1968) and Moore (1965).

Despite these limitations, for the health care field, it is obviously important at least to consider the possible development of appropriate rewards and penalties which provide incentives to the provision of more efficient, economical and effective medical care. The question of how and when to use such techniques, however, requires further investigation, as indeed also does their substantive content.

Finally, there is the particular problem that relates to defining the costs that are associated with patient care. Massachusetts Blue Cross, for example, includes "free service" as a reimbursable cost of providing hospital care, whereas the Rate Setting Commission considers this item to be a reduction of income. If reimbursement is cost-based, this distinction obviously becomes significant to the level of the rate. It may also influence either the ability of a hospital to attract and keep its employees and medical staff, or the costs associated with any given level of such competitive ability. Thus, is providing employees and medical staff with health insurance as effective and as economical as offering these groups "free care" as part of their reimbursement

for services provided to the institution? Is such "free care" a cost or a reduction of income and is it conceptually the same as the "free care" offered the indigent patient from out-of-state that does not qualify for any of the Massachusetts public assistance programs?

A similar problem arises with respect to the costs incurred by an institution for medical research and teaching. However, at least for the moment, there appears to be more general agreement that these costs should not be attributed to patient care. However, this decision might well be reevaluated in the light of growing third-party coverage for medical care and declining alternate sources of support for research and teaching. It can be argued that the border between patient care and research is exceedingly hazy since research may be relevant to the provision of better patient care both directly in a substantive sense and by attracting staff that has the specialized expertise to deal with more complex sorts of diagnostic and therapeutic problems. Similarly, expenditures for education, by enabling a hospital to recruit and train new personnel, in addition to retaining an educationally oriented staff, may be directly beneficial to the patient. Thus, it is at best difficult to demarcate the lines between what was designed to be and what actually becomes relevant to patient care. As a consequence, as third-party coverage becomes more widespread, and as funds for research grants becomes less plentiful, it will be necessary to consider the alternative methods of funding research and medical education, such as general tax revenues. It will then be necessary to decide whether these funding techniques are more or less desirable than

financing such expenditures through third-party payments to hospitals and other medical care facilities. Were this latter alternative to be adopted, it would obviously mean that expenditures for medical education and medical research might become allowable costs for reimbursement purposes.

SUMMARY

Thus, although seemingly of a technical nature, the details of the rules and procedures used to determine the statistical data that will be used in calculating reimbursement rates are obviously critical to their final level. As previously noted, Blue Cross, for example, includes "free service" as a cost of providing hospital care whereas the Rate Setting Commission considers this item to be a reduction of income. If reimbursement is cost-based, this distinction obviously becomes significant to the level of the rate.

Not only are definitions of allowable expenses important, but questions arise concerning the delineation of the time periods to be utilized. Especially in the development of cost projections factors, the exact dates utilized can work to the advantage of some institutions and to the disadvantage of others, depending upon their rates of growth and upon the variation in their utilization and expenditure patterns over time.

Equally, the level of departmental aggregation to use in calculating costs and determining rates may influence the level of the final rates, as may specifications of the types of allocations that are to be made in distributing costs to revenue producing departments. Finally, of course, the details of the administrative procedures that are applied before payments are authorized may influence both the timing of reimbursement and the extent of the adjustments in rates that may result from the audit process. Some of the issues involved in these more technical areas are discussed in this section.

Finally, of course, there are the major decisions that must be reached with respect to the units of service to price

and the kinds of dollars to utilize in establishing their value. These are each complex questions in themselves, but in combination the possible alternatives become enormous, since solutions which are undesirable if evaluated by themselves may become useful when placed in combination with other sorts of decisions.

However, it would appear that at least certain elements of the reimbursement formula can be analyzed in a straightforward fashion with accord then being reached upon their contents. It would appear that time periods and many aspects of the definition of reimburseable expenditures are among these elements. It should then be possible to define the elements of the reimbursement formula that remain in dispute and to explore the alternative possibilities with respect to these elements more thoroughly. Since a reimbursement formula, like a modern wage contract, has many elements, it would appear that ample room should exist for negotiating among these elements, even when it becomes impossible to reach agreement concerning the precise settlement of the terms of a specific element.

SECTION V: Evaluating the Alternative Methods of Paying for Care: Objectives and Priorities of Health Care Systems

In the preceding section of this report, attention has been focused upon defining the underlying nature of the choices open to the Rate Setting Commission in establishing the myriad of specific rules and regulations that together create the structure that is colloquially referred to as "the reimbursement rate". On the one hand, discussion centered around the precise dollar base to use in establishing such rates, that is whether to use costs, charges or budgeted data. On the other hand, emphasis was placed upon the specific measures of volume of service to use as the basis for payment, that is whether to set these rates per diem, per capita, per case, or per a la carte unit of service.

In addition to deciding whether payment should be related to the hospital day, the eligible individual, the sick patient, the particular service, or some combination of these units, however, it became clear that it would also be necessary to decide whether, within the chosen category or categories, there would be further differentiation in rates on the basis of: the diagnosis of the patient, his age or dependency status; the type of facility utilized or the kind of third-party coverage that applied; the circumstances of onset of injury or illness; or other characteristics of the recipient or provider of care. Thus, for example, the notion of a case rate combined with differentiation by diagnosis becomes essentially what has been referred to by others as a spell of illness rate (for example, see Wood, 1970). Furthermore, if such an injury or illness is a

result of employment (nature of diagnosis and circumstances of onset) and third-party coverage is consequently to be through Workmen's Compensation (third-party coverage), the industrial accident per diem rate is to be applied (see Regulation No. 70-7).

However, the identical problem may be paid for differently if it occurs in the home or if it results from the action of a motor vehicle.

In evaluating the various methods of determining rates, therefore, it is clear that basic principles of equity and welfare economics are involved. To what extent should the well pay for the sick? To what extent should the employed pay for the unemployed and the aged? To what extent should the seriously ill pay for the less seriously ill? To what extent should health and medical coverage be different for motor vehicle accidents, industrial accidents, or for conditions covered by non-profit service corporations rather than commercial carriers? Although these are largely political and philosophical questions, which as a consequence lack objective answers, they are nevertheless issues that must be posed. Furthermore, they encompass a variety of more technical components that are more amenable to objective analysis than the value systems that underlie their philosophic commitments.

Without being exhaustive, therefore, it is the purpose of this section to delineate some of the questions that must be asked in evaluating the major elements and component terms of a reimbursement settlement. In a broader sense, therefore, these questions define the criteria or goals against which alternative reimbursement methods may be evaluated.

WHO SHOULD PAY FOR MEDICAL CARE?

As discussed above, in defining the fair share of the costs of health care that are to be assumed by the purchaser, any reimbursement structure involves questions of the equity of this burden among different classes of buyers, among different segments of the population, and among different users of service. There is the question of the relative burden to be placed upon the sick or the well individual, the insured and the uninsured, and the old or the young. Other characteristics of the population may be considered relevant, from employment status to sex and race. In addition, characteristics of the illness, such as diagnosis or severity, may be more or less precisely related to the level of reimbursement. Similarly, as previously indicated, coverage may be dependent upon the nature of third-party coverage, which in turn may depend upon the circumstances of the onset of the disease or injury.

In determining the differential burden to be placed upon the various possible users of medical care for the cost of the service they receive, however, it may be impractical, if not impossible, to isolate and identify that portion of the expenditures incurred by an institution that are in fact associated with the particular user group. Thus, notions of equity need to be tempered by a realistic appraisal of the cost structures and accounting realities that prevail in health care institutions. The higher the proportion of overhead, fixed or joint costs associated with more than one health service, the harder it will be to find objective bases for distributing

costs among different classes of users.

TO WHAT EXTENT DOES THE REIMBURSEMENT RATE REFLECT
THE VALUE OF THE RESOURCES UTILIZED IN RENDERING
THE SERVICES?

Thus, as a corollary to the question of the equity of the consumer burden, the question arises as to what extent the reimbursement rate reflects the underlying value of the resources utilized in rendering the care. The more accurately the rate reflects the underlying value, the more automatic is the apportionment of value among users.

Regretably, the problems are many, and not merely those related to the problem of joint costs. As discussed in Section IV, there is the problem of forecasting the relationship between costs and reimbursement rates over time, since rates tend to be established at the beginning of an accounting period, whereas costs are not known until the end. In addition, in determining the value of the resources, it is necessary to decide whether resources are being utilized at the most efficient capacity levels. To the extent that less than optimum patterns of providing service prevail, it is necessary to establish acceptable levels of "down-time", "stand-by time" and or other manifestations of underutilization which are deemed to be costly. Furthermore, in determining these levels, it is also necessary to establish comparative standards, that is to decide whether resources are being utilized in a sufficiently productive, efficient and effective manner as compared to other similar institutions or to alternative modes of therapy and treatment.

HOW SHOULD PAYMENTS FOR MEDICAL CARE BE DISTRIBUTED AMONG PROVIDERS?

Just as there is an equity problem in distributing the burden of the cost of health care among possible consumers, so too there is one in distributing revenues among possible providers. Should rates of payments to providers be differentiated on the basis of "stand-by" capacity, be this the know-how of the board certified specialist or the availability of facilities to meet the most complex of emergencies including open-heart surgery? Should rates of payments be differentiated on the basis of type of facility, with the same service receiving differential returns depending upon whether it is performed in a nursing home, extended care facility, hospital or physician's office? In one sense, of course, this problem may be related to the question of the extent to which payments should reflect costs of service, where costs in turn reflect skill levels of the providers. In another sense, however, this question relates to the much broader issue of whether, by virtue of the differential rates of reimbursement that are established, certain types of providers should be either encouraged to render or discouraged from offering certain types of care.

HOW DO REIMBURSEMENT RATES AFFECT THE SUPPLY OF HEALTH CARE, AS DETERMINED BY THE AVAILABILITY OF RESOURCES, THEIR COST AND PRODUCTIVITY, AND THE EFFICIENCY WITH WHICH THEY RENDER SERVICE?

Phrased in another way, therefore, the question of distributing revenues among possible providers involves the effect of reimbursement rates on the supply of health care as determined

by the number, type, and kind of facilities, programs, and manpower that the industry is able to attract and retain. Since the supply of services is affected by the productivity of resources, as well as by the efficiency with which they are organized to render service, the ultimate supply of the final product which is health care cannot be considered to be identical to the number and kinds of resources that are employed.

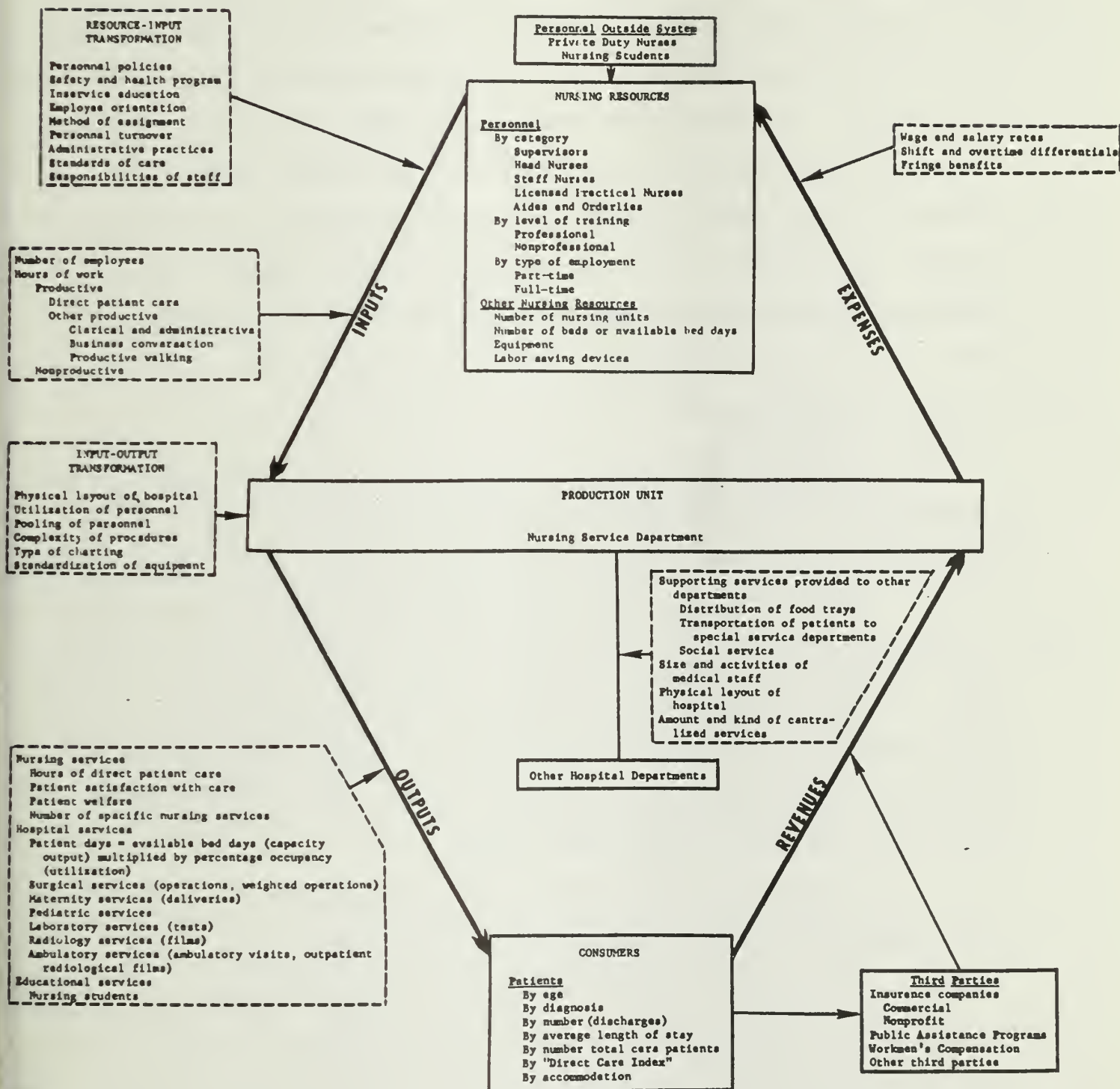
Indeed, many questions exist concerning the optimal way to organize any given quantity of resources. Thus, for example, what is the optimal size and organization of each individual institution, be this a hospital, a nursing home, or a visiting nurse association? Not only is it important to answer such questions if resources are to be deployed in optimal fashion, but such information is required to determine the appropriate population base which should be available if these resources are to be used efficiently, both individually and in combination. Thus, for example, whole blood can be made available to small population groups as blood banks can be located in most hospitals; despite this decentralization of services, however, many aspects of collection and processing of the blood can remain centralized through local chapters of the Red Cross.

The following diagram of the flow chart of the nursing service department of a hospital illustrates more fully the complexities of evaluating efficiency when output of services can be influenced by any aspect of the system. Changes in the characteristics of the patient and the nature of payment arrangements, for example, may, in the absence of compensating changes in the nature of the services being rendered, influence efficiency by changing the need and demand for care.

Figure 8

Figure 8

Flow chart of a nursing service department in a hospital as
as an economic entity¹



¹ See notes on the next page.

Source: Ingbar, Mary Lee, Barbara J. Whitney, and Lester D. Taylor.
"Differences in the Costs of Nursing Service: A Statistical Study of
Community Hospitals in Massachusetts," *American Journal of Public Health*,
56:10:1699-1715 (October 1966), preliminary figure 1.

Thus, the evaluation of efficiency and effectiveness is a complex matter which cannot be undertaken in isolation from existing conditions within the relevant sectors of the health care system. Furthermore, what is most efficient and effective for a part of the system need not be best from the point of view of the whole. Thus, that which is most desirable from the vantage point of a particular institution need not maximize the effectiveness of a group of institutions, particularly when these offer different types of services. As a consequence, to the extent that the concern of the public centers on the performance of the system as a whole, providers of care cannot be expected to evaluate efficiency and effectiveness in a fashion which is consonant with the best interest of the public at large.

Notes to Figure 8.

This economic model of any nursing service department applies to hospitals, both individually and collectively. It has three basic parts: 1) resources, 2) units of production, and 3) consumers. The resources include, among other things, the personnel and equipment that are utilized in providing nursing services, while the production unit is imply the nursing service department. Finally, the consumers are the patients who are the recipients of nursing care. Continual interaction occurs among these three groups through the medium of four "flows," which may be termed: 1) inputs, 2) outputs, 3) revenues, and 4) expenses. Nursing service personnel (the resource) supply hours of nursing service (the input) to the nursing service department (the production unit) which utilizes these inputs to provide patient care (the output). Finally, to complete the circle, the patients become both the consumers of this care and the sources of funds, perhaps via third parties, which help the hospital to pay the nursing staff for supplying inputs.

This model simplifies the complexities of the real situation. Thus, from the point of view of the production unit, the flow of funds between it and the consumer is considered to be an income or revenue, while the flow between it and the resources is commonly termed an expense. However, from other points of view, these dollar flows have different names. For example, those that are expenses to the hospital may become incomes to professional staff and non-professional employees. Likewise, those dollars that are income to the hospital may be viewed by consumers as personal expenses, either as out-of-pocket payments to the hospital or as regular premiums to third party insurers, whereas that segment of hospital income that originates from consumer payments of taxes may be overlooked. Consumers may also ignore distinctions between revenues actually received by the hospital and billings to patients, and differences between these charges and "true" costs.

IN EVALUATING THE AFFECTS OF REIMBURSEMENT RATES UPON THE
SUPPLY OF HEALTH SERVICES, WHAT TIME PERIOD IS RELEVANT?

Thus, implicit in any evaluation of the effect of reimbursement rates upon the supply of health care services is the adoption of a time horizon which defines the duration of the period relevant to the evaluation of consequences.

If sufficient time is allowed, producers ultimately have the choice of leaving the health care industry. Thus, for example, if the reimbursement rate or price were set so far below the cost of rendering care that the only possible outcome is bankruptcy, the optimal solution for such a producer might be to quit the health care industry and devote his efforts and resources to other fields. If such a producer offers care that is comparatively costly in resources and poor in quality, it may be desirable to encourage his exit from the health care industry by offering a price that is below dollar cost.

Conversely, a present or future price that is markedly above existing or expected cost may be used to stimulate entry into the industry. Thus, anticipated life-time earnings may be an important consideration in determining the number of applicants that apply to medical schools and nursing programs instead of to other programs of graduate education. Even after an individual is committed to the medical profession, his field of specialization may be influenced by anticipated earnings, both between and within medical and surgical areas. Likewise, within specialities, price and earning levels, both present and future, may influence the relative balance placed on different sorts of activities, such as those relating to patient-care, teaching or research endeavors.

DO THE ACCOUNTING RULES AND REGULATIONS FOSTER THE
ACCUMULATION OF THE DATA REQUIRED TO EVALUATE THE
EFFECT OF REIMBURSEMENT RATES ON THE SUPPLY OF
HEALTH SERVICES AND THE DEMAND FOR CARE?

In evaluating the price to charge for medical care, it is obviously necessary to include the overhead and administrative expenditures not individually identifiable with a service or a department. Unless such joint expenses are included, prices cannot be set at break-even point levels.

Thus, for example, present practices of the Rate Setting Commission make the assumption that administrative and general expenses are to be allocated to revenue producing departments in proportion to the payroll dollars associated with these departments. Expenses of the housekeeping departments and those of operating the plant, on the other hand, are distributed to the revenue producing departments on the basis of floor area. (For further details, see Schedule V, Hospital Statement for Reimbursement, HCF 400 Report.)

Whereas such procedures are necessary if reimbursement rates are to be both departmentally oriented and designed to enable an institution to break-even, they are obviously not appropriate to the appraisal of the efficiency with which individual departments are operated. Thus, for example, if the reasons for differences in expenditures of laboratories are to be sought and associated with differences in the kinds of tests that are performed and the types and number of personnel that are hired, the inclusion of overhead allocations from general services that may reflect inefficient housekeeping or plant maintenance techniques, merely confuses the relationship between the direct

expenditures incurred in the laboratory and the services that result. In terms of Schedule V of the Hospital Statement for Reimbursement (HCF 400 Report), this latter analysis is best undertaken with adjusted general ledger expenses, that is direct departmental expenses after certain standardizing adjustments.

Thus, it would appear that it is necessary to delineate more sharply than in the past the appropriateness of the data being collected for the purposes to which they shall be applied. Whereas allocations of overhead may be appropriate if reimbursement rates are based upon certain types of units of service, they may be inappropriate for others. Similarly, data relevant to deciding whether a provider can break-even or what burden of cost should be born by a particular consumer may be quite inappropriate to the evaluation of optimal institutional size, resource productivity or efficiency of rendering services.

WHAT IS THE COST OF ADMINISTERING THE REIMBURSEMENT STRUCTURE?

The subtler aspects of the cost of any reimbursement system involve its effects upon the performance of the industry, consumer and producer alike. In addition to the types of costs which have just been discussed, however, there are the more specific administrative costs attached to the payment of any bill for health services. These costs may be more or less depending upon the way in which the bill is calculated, the method of establishing the eligibility of the beneficiary for service, and the manner of determining when and how the provider is to be paid.

Thus, for example, among the more specific elements of the administrative cost of any reimbursement system are the expenses incurred in preparing, processing and paying each bill and the number of such bills that in total must be handled and submitted. One of the allegations against the present per diem system of paying for publicly-aided cases, for example, has been that the administrative savings that should result from the use of a per diem cannot be effectuated in the face of the retention by Massachusetts Blue Cross, Inc. and Medicare of a system of reimbursement that is based on percentage of charges. As a consequence of the need to retain charge data for the Blue Cross and Medicare patients, it is impossible for institutions to introduce the sweeping simplification in accounting personnel and practices that might otherwise be possible were all payments based on a per diem average.

Not only may the cost of paying bills be influenced by the sorts of reimbursement rates that are established, but the cost of the program may be influenced by the speed with which these bills are paid. The faster bills are paid, the less the working capital that an institution must maintain to support its accounts receivable. Indeed, hospitals in the Commonwealth have become increasingly concerned with this problem. As interest rates rise, delays in establishing rates or in paying bills become more costly.

Similarly, administrative costs increase when questions arise concerning the eligibility of a patient for benefits. Such problems may relate to a particular service and whether it will be

covered, as with certain types of psychiatric or long-term care for which the individual may not always be eligible for benefits. Equally, however, uncertainty may arise from the circumstances of the illness or injury, as when an individual that is covered by a Blue Cross contract becomes ill at work with a coronary syndrome that might be covered by Workmen's Compensation as related to his employment status. Disputes over such coverage, and similar problems with respect to motor vehicles, may be costly in administrative and accounting time, quite apart from any additional expenses that may arise if litigation eventually occurs. Furthermore, these monetary costs that must ultimately be borne by the program are often only a small fraction of the burden that delay and absence of immediate coverage place on the patient and his family during the interim while final agreements on reimbursement are reached.

TO WHAT EXTENT DOES THE REIMBURSEMENT STRUCTURE ENCOURAGE
THE PRACTICE OF "GOOD" MEDICINE THAT EFFECTIVELY
AND EFFICIENTLY MEETS THE NEEDS OF
THE PATIENT AND HIS FAMILY?

One of the paramount goals of any reimbursement system is not merely to provide the funds with which participants can produce health and medical care, but to provide these in a manner which fosters the health of the individual and his family. This implies that the provision of services must be beneficial to the health status of the individuals concerned. It implies also that care must be sufficiently frequent and of the right type to help prevent illness, as well as being adequate to diagnosis and treat conditions once they have arisen.

Finally, it implies that medical supervision once initiated will be continued so that individuals and their families can be restored to their fullest functional capacity - medical, social and economic - by appropriate rehabilitation and follow-up care. In short, the general health aims of public health and medical care must be introduced as criteria against which to evaluate the performance of a reimbursement system.

From a practical point of view, however, there is an obvious need to reconcile such goals that relate to the best possible care with those that concern the cost of this care to the tax-payer, to the program, and to the user of service. Compromises become necessary when the public purse or third-party buyers find it impossible to afford Cadillac medicine for all individuals and for all types of diagnostic conditions. The structure of reimbursement rates may be more or less helpful to this process if indeed, as assumed by classical economists, price affects both the demand for service and its supply.

Thus, it can be asked whether differential reimbursement rates, or their absence, weight decisions of physicians in favor of more expensive procedures or less desirable practices. The elective surgery rate has been found to be more frequent when physicians participate in indemnity programs that pay on a fee-for-service basis instead of being a salaried member of a group practice,

as in the Health Insurance Plan of Greater New York and the Kaiser Foundation Health Plan.¹ Similar findings were reported by the Health and Welfare Fund of the United Mine Workers. More subtle influences of the reimbursement system, however, have not always been evaluated, as with the substitution of safer and slower medical solutions for more dramatic surgical interventions, or the reliance upon surveillance by professional personnel of patient progress instead of using more rapid pharmacological remedies.

Differential rates may affect the consumer's choice of service as well as the provider's selection of what type of care to recommend. As has been suggested in earlier sections of this report, which facilities are used depends in part upon the extent to which the consumer must bear out-of-pocket costs. Over-use and under-use alike may be encouraged by the adequacy of the reimbursement rate, and its effect on both consumer and provider. Lack of coverage encourages the consumer to seek

¹For a full discussion of references relating to these problems, see footnotes 12-16 to Chapter 1 in Ingbar and Taylor, 1968 pp. 205-206.

alternative sources or types of care, as in the use of in-patient services when comparable outpatient care would be at the patient's expense. Inadequate coverage or low reimbursement rates foster providers to suggest other types of care, as in the hospitalization of cardiac patients that would otherwise require lengthy treatments within the home. Ample coverage may lead to careless use of services as has been suspected in the area of laboratory and radiological services. Thus, although the evidence may be sparse, it would nevertheless appear essential that more concern than hitherto be devoted to an evaluation of the appropriateness of reimbursement rates as incentives towards the practice of "good" medicine.

Furthermore, to the extent that the reimbursement rate operates upon supply and demand in a fashion that is analogous to that of any other "price", it can be anticipated that the most price sensitive areas in the market for health services will be those in which the medical "need" for service is least well defined. The willingness of the patient to seek treatment and the proclivity of the professional to render service will both be affected by questions that relate to who pays the high cost of investigating minor symptoms that may eventually be diagnosed as "non-disease" (see Meador, 1967). Similarly, where symptoms are not acute, as during the long periods of onset and remissions that may accompany chronic illnesses, the price of service may deter the adoption of the best treatment practices.

Thus, expressed in another way, the reimbursement structure helps to allocate the comparatively limited supply of resources

and health services among competing uses and users. The question is whether the rates ration available supply to possible needs and potential demands in a fashion that is consistent with the practice of "good" medicine.

TO WHAT EXTENT DOES THE REIMBURSEMENT STRUCTURE
INHIBIT THE FREE CHOICE OF THE CONSUMER?

In addition, it can be asked whether the process of adopting supply to demand is accomplished without unduly impinging upon the freedom of the consumer to acquire that care which he prefers. To some extent, complete freedom of choice on the part of the consumer is inconsistent with third-party coverage; the consumer implicitly transfers the right to impose some constraints upon his action to those that have assumed the financial liability for his actions and thus freed him from the effects of price constraints.

However, these transfers need not be complete. Thus it can be asked whether the limits of third-party coverage should be refined and whether direct payments should be reintroduced so that consumers may choose more freely by uses price as a means of acquiring services of an amenity on nonessential nature. The question is whether it is possible to differentiate those peripheral items of care that might be available on the basis-of-ability to pay from those that should be provided regardless of financial means as being of cardinal significance to the provision of "good" medical care. If these areas can indeed be demarcated, program expenditures can be kept minimal without impinging upon the freedom of the consumer to purchase directly more expensive alternatives and "unnecessary" amenities.

SUMMARY

The major elements of the reimbursement rate were defined in the fourth section of this report, whereas the possible objectives and priorities of health care systems were discussed in this concluding section. In practice, of course, as previously suggested, the technical aspects of rate making cannot be separated from the social and economic impact of the rates after they are established. Any system of rates imputes relative weights that influence which consumer pays what share of the total bill. Similarly, since resources rendering care always receive some form of compensation, albeit not necessarily always monetary, any rate imputes comparative values to the services rendered by different types of providers. Thus, rates influence, whether by design or indirection, the relative standing of the various professions and their institutional partners. As a consequence, reimbursement rates affect the supply of health services by affecting the supply of resources as measured in quantitative terms or by their cost, their productivity, or the efficiency with which they render service. Such effects, moreover, will become more noticeable, the longer the span of time under consideration. Similarly, the longer the period of time allowed for adjustment of the system to existing reimbursement rates, the more noticeable becomes the effect of these rates upon administrative costs and the quality of medicine that is practiced.

Thus, if rates are to be designed to increase the effectiveness and efficiency of the health care system in meeting the basic health needs of the patient and his family, it is essential

that the dynamics of their influence upon the health care available to, and demanded by, the individual be taken into account as the rates are being established. Thus, this section has attempted to enumerate the impact of rates upon the health care system in the hopes that such awareness will ultimately promote both better rates and better health care.



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